Arēs

THE MAGAZINE OF SCIENCE FICTION AND FANTASY ADVENTURE GAMING

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Producer and Co-Creator of

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Ares

THE MAGAZINE OF SCIENCE FICTION AND FANTASY ADVENTURE GAMING

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ENCLOSURES: *DeltaVee* map, counters and rules; Feedback card; subscription form.

Looking Ahead to Next Time

Ares nr. 10 will feature *Return of the Stainless Steel Rat*, in which the immortal Jim diGriz takes on a rabid computer and its murderous programmer. Also featured will be a story by Harry Harrison to accompany the game, Science for Science Fiction, Facts for Fantasy, reviews, and much more.

When to Expect Nr. 10

Domestic Subscribers: If you have not received your copy of *Ares* nr. 10 by 9 October 1981, notify our Customer Service Department. Please include your Customer Code and issue of expiration, both of which should be found on this issue's mailing label, just above your name. *Foreign Subscribers:* Add eight weeks to the above date to allow for the lymphatic pace of international mail.

On the Cover

John W. Pierard's representation of a *Dagger* class ship from *DeltaVee*, the *Universe* tactical space combat system, and a scene from *Dragonslayer*, a Paramount Pictures-Walt Disney production.

Muse

I suppose that it's impossible for you not to notice that the rules to this issue's game are printed as a separate booklet. The total page count of the twin-booklet magazine is 52 (a 30% increase over the normal 40 pages). This is due partly to the convenience of printing all the *Universe*/*DeltaVee* rules at once. It's also to allow you to buy the Basic Set of *Universe* (which includes the role-playing material but not the tactical combat system) and thereby have a *complete Universe* game with no duplicate components.

We may very well follow this procedure on all our *Ares* games in the future — i.e., print the rules separately — which is not exactly innovative; it's the way *Strategy & Tactics* magazine was configured over 10 years ago. I would think that this would be considered a "plus" to most of you but do let me know if I've presumed too much.

In line with your indicated desires, we've begun to include more game material in the issue (see *The Sword and the Stars* article). On that note — the "House of Kurin" capsule adventure in issue 7 got a bad overall rating but did very well with those of you who are avid role-players. Predictable enough. But where does the wide split in acceptance leave us vis-a-vis printing material not wanted by one group and highly desireable to another?

Redmond

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Dragonslayer Interview with Producer Hal Barwood

by Michael E. Moore

It is forty feet long and has a wingspread of 90 feet. It snarls and spits 30-foot long flames from its mouth. It is called Vermithrax Pejorative, and it is a dragon, a primal force of nature. It is the creature the young apprentice Galen must attempt to destroy.

It is also the brainchild of Hal Barwood and Matthew Robbins, who wrote the script and acted, respectively, as producer and director of *Dragonslayer*, — a new Paramount Productions Corporation and Walt Disney Productions fantasy motion picture. Though the picture features Sir Ralph Richardson as the master sorcerer Ulrich, Peter MacNicol as the young Galen, and Caitlin Clarke as the courageous Valerian, the true star of *Dragonslayer* is the terrible beast, Vermithrax. British-born Brian Johnson headed up the mechanical effects during the principal photography in England and Wales, and George Lucas' Industrial Light and Magic, Inc. (ILM) had an 80-man team work on the special photographic effects for the film. The teamwork of Johnson and ILM (under the supervision of Dennis Muren) helped create a true monster well worthy of testing young Galen's mettle.

"There is something irresistible in the idea of a young magician who has not gone through his rite of passage and who can't really do it," Hal Barwood explained. "There is a certain charm and relevance to the many situations that seem to hang in the air around such a character.

"The story has its immediate inspiration in *The Sorcerer's Apprentice*. We searched around quite a bit to come up with the grand task this foolish young man should undertake. In our research we came across the story of St. George and the Dragon. Everybody's heard of it yet most people don't have the faintest idea what the story is about.

"In the St. George story, the king finds himself in a terrible quandry. He loves his people and protects most of them from the dragon by periodically sacrificing virgins in a lottery. As the story opens, he chooses the lot with his daughter's name on it, and he's in a terrible dilemma. He wants to do right by his people, but he also loves his daughter. Suddenly, St. George rides up and says, 'If you'll all just become Christians, I'll kill the thing, and that will solve your problem.' He does, and they do, and he becomes a saint for converting the whole kingdom.

"The *Dragonslayer* version is an evil twist. The king has never let his daughter's name appear in the lottery. The Princess Elspeth (played by Chloe Salaman), the king's young daughter, is innocent of her father's plot and discovers to her horror that she has been kept out of it all. This absolutely destroys her, and so she offers herself as a sacrifice to atone for what she regards as a very great sin.

"Our film is about magic. Sword and sorcery fantasies of the Conan and Thongor variety emphasize physical prowess and skill at arms. Galen, our hero, is about the furthest thing from Conan you can come across. The kid can't even tie his shoe right, much less cut somebody's head off. But he learns."

The setting for the film's story is also important for setting up a believable atmosphere in which a tale of magic occurs, Barwood explained. "We picked the 6th Century, the dark ages in England, the interregnum after the fall of Rome and the ebb of Roman civilization out of Britain. We thought it would be good to set our movie at the leading edge of the rising tide of Christiandom, when the old powers are leaving and the new powers are coming in. Ancient magic — the closely held secret and guarded

Scenes from *Dragonslayer* showing the elder sorcerer Ulrich, the young Galen and Valerian, King Casiodorus and the Princess Elspeth, and the dragon Vermithrax; *Dragonslayer* is a Paramount Pictures — Walt Disney production.

knowledge which is deep and powerful — is replaced by something shallower, but much more widespread and humane. *Dragonslayer* is elegiac as regards the last dragon, the last of magic. There is a certain amount of regret in saying good bye to the whole phenomenon.

"There is a contrast we present in the film between magic and Christianity. It's clear in the actual battle magic wins, but it's also clear historically that Christianity ultimately conquers. In the subtext of the story, there is the clear implication that there is something civilizing about Christianity and something useless about magic in spite of its great powers. At the end of the film, it's the revisionists of history who have taken over as to who killed the dragon.

"Our movie is definitely pre-medieval. No armor, no chivalry, no ladies in wimples patrolling the parapets of high castles with their veils blowing in the breezes...there's no courtly love. We feel that sort of material has been used up over the years by various historical costume melodramas. I find very little in such pieces to differentiate them from the Western. Certain stories like *Ivanhoe* and *The Master of Ballantrae* work, but the problem is that you can wind up with *The Black Shield of Falworth*.

"We wanted something quite different: to convince viewers that dragons are absolutely real and inhabit a world which is appropriate to their existence. We wanted a much stranger landscape that is much less civilized, where people have very strange values. The dragon is not the villain of the piece; he's a force of nature that's run rampant. The villains are the people running the kingdom of Urland who, because they can't figure out how to kill the dragon, try to buy it off by sacrificing a virgin on the solstices and equinoxes. It's a social system which is inherently evil, and the people who perpetrate the social system are the true villains."

Barwood has strong feelings about the use of magic and dragons as presented in fantasy books and films, and his special interest is represented in *Dragonslayer*. "Dragons, although Ulrich would start to squirm if you really pressed him on the point, owe their existence to wizards. Once in the past, one wizard created dragons for reasons no one understands — a wizard gone wrong — and let them loose upon the world. Ulrich is one of the last real magicians who understands his craft in a systematic way; his teacher and patron, Balisarius, was much more powerful yet. One reason why the old man is willing to go up against the dragon, and also why he hestates, is that he knows about the history of dragons. In the subtext, we imply that creating the dragon is beyond him and, possibly, so too is getting rid of it.

"It's always been a great regret of mine that dragons didn't actually fly through the skies of earth. It's the same kind of nostalgia you feel for blimps. There's something magnificent about such things. Why aren't they real? And isn't it a shame?

"Magic is something else I feel that way about. I'm interested in the alternate worlds where all the various tests to being human that we apply to the ordinary world apply, but with a set of circumstances which make everything clearer. I'm interested particularly in the kind of mythology you find in *The Ring of Nibelung*, which is my choice as the greatest single fantasy that has ever been put together. It is Wagner's 19th Century version of the German and Norse myths, in which he overlaid 19th Century humanism onto the old and severe and *strange* stories from our deeper past. The notion that it is mortal men who have to help the gods out of their troubles makes a story that prickles the hairs on my neck."

Barwood admits to not having a coherent theory to how magic is supposed to work. "I have come across books in the genre where magic is explained as another kind of physics," he explains, "but I don't look at it that way. Magic owes its powers to the understanding of a deeper meaning of the situation — you are tapping into some of the powers gods have.

"Yet there definitely is a problem in the magic trade. To get the serious attention of people around you, you have to entertain them with parlor tricks, or they're never going to understand when you're doing something really important and impressive. It happens to everybody. We occasionally give people tours of ILM where the special effects are done. They look at these absolutely amazing things going on there and say, 'That's nice.' So, you need something a little SHOWBIZ! Even magicians need that. You really have to go out there and leave 'em laughing.

"Of course, magic is hard to do even for those who do it well. There is a certain kind of naturalness we designed into the magic in *Dragonslayer*, making it a mystic thing that is deep, and that has to be tapped into. It's not so much that *you* have the power, but that you are somehow able to get into sympathy with some underlying power and act like an amplifier. In the movie if you want to bring down thunderbolts on the monster, you can't have them crackle off your fingertips; you have to summon up a storm and, once the storm is there with the power to generate lightning, you can then direct it out of the

clouds onto the beast. We've tried to give a certain kind of reality to the magic, so that wielding it is a difficult process...and it sometimes doesn't work."

The genesis of *Dragonslayer* goes back over two years. Robbins and Barwood met at the USC film school and have co-written movies such as *The Sugarland Express, MacArthur, The Bingo Long Travelling All Stars and Motor Kings,* and *Corvette Summer.* Both men have a strong interest in fantasy and science fiction. "My partner and I have been interested in fantasy and science fiction and marvelous tales ever since we were kids," explains Barwood. "I've read all the basic classics in the genres of fantasy and science fiction. You could pulp my library of paperbacks and publish the NY *Times* next week with it. I saw a billion science fiction movies, which have now wound up on my Betamax shelf as we gather them off the air.

"There is a certain tradition of the marvelous in film, but such movies aren't done often. *The Thief of Bagdad, The Wizard of Oz, King Kong*...they are very respectable films. The combination of costume and whatever other elements are special ingredients, however, make it costly and hard to do well.

"One of my favorite genres and the one I feel most like apologizing for is science fiction. The number of great science fiction films can be counted on one hand. It's extraordinarily difficult to create something from scratch amd make it seem arresting and exciting and real."

Barwood also has strong feelings about the process of making monsters charming, such as the *Drak Pack*, a Saturday morning cartoon series, in which a vampire, werewolf, and Frankenstein's monster are portrayed as heroes. "I find that perverse to tell you the truth," he says. "Dragons are terrible creatures and ought to be thought of as such. Dragons are bad news. They snarl and smell bad, and if they blow fire over you, you're a dead (and roasted) duck. They're surprisingly resourceful and very hard to kill. Watch out for them and don't let them injure your heroes. That's my advice to young America."

He also dislikes the way many monsters are cheapened nowadays. "Sentimentalizing is one of the great bourgeois traits of the world, and has gone on for centuries and will go on for more centuries. There's simply no way around that. The point of *Dragonslayer* is to go against that trend. We went back to the basics. We take the view that dragons were real and that the last one was dispatched...and right away there was confusion about what happened. The moment magic goes out of the world, it becomes a rumor in peoples' memories. Soon the horrible tales become sentimentalized. Suddenly history becomes legend and then myth and finally silly cartoons. When you see a picture of *Pete's Dragon*, it's as though you were looking at a beast which has gone through so many changes that people have forgotten it was based on something real."

With the sudden spate of new fantasy movies released or about to open — *Excalibur, Clash of the Titans, Conan, Superman II, Knightriders,* and *Dragonslayer* — Barwood finds no strange conspiracy in a trend towards fantasy. Certainly the explosion in the technology for special effects realized in *Star Wars*, and the resulting wave of science fiction films, made both writers realize that these same elements could be adapted to fantasy, but neither man was aware of the new boom about to hit the market. "I didn't find out about these films until after we had written our screenplay," Barwood said. "For instance, I was totally unaware of the actual concept of *Dungeons and Dragons*. I was amazed to discover it was such a widespread phenomenon. We got lucky, we thought, but it came like a thunderclap to us. I was familiar with war games and played a lot of them. I'm a game nut. I never played *D&D* and I probably never will. I just know my partner and I got very excited with our story and we dove into our typewriters, and when we emerged we discovered this phenomenon.

"However, we are not part of any conscius trend. Recently there was a spate of soap opera movies — *Kramer vs. Kramer, The Great Santini, The Turning Point, Ordinary People* — but though these things occur in trends, I don't have an explanation for why they happen. I hope people won't go see *Dragonslayer* because they think it's sword and sorcery or a particular kind of monster fantasy. It's none of those things exactly. If you're a Procrustean, you can sort of fit us into that bed, but you'll have to lop a toe or two off to get us in there."

Barwood readily admits he has a great interest in simulation games. "I love 'em, as much as I can stand 'em," he states. "I've always been interested in games. There's something of the thrill of the stories working themselves out in the process of playing the game. Every time you sit down to play a game — it doesn't matter what kind of game it is — there is a shape and feel and drama to it which is very much like a good book or a wonderful movie. In a simulation game there is even more emphasis on the storytelling aspect of the gaming. There's something unique about simulation games in that you move all your men and then you resolve combat, which sometimes doesn't work. In chess, you move a man into a square and the enemy piece is gone. In a simulation game that doesn't always happen.

"Nor is it all skill that's involved. There's the mystical element of chance that enters the game via the roll of the die, but it doesn't dominate the game, as in *Yahtzee* for example. The chance factor also tends to lower the combatic temperature and make the game enjoyable even when you're getting creamed. Somehow even when the monster is stomping Sheboygan into the ground and all your tanks are destroyed, it's still fun.

"I also find exciting the idea that sides aren't exactly mirror images of each other. There is such an imaginative quality when you're sitting down playing a game. Your brain sort of vaults into a storytelling mode and you begin participating in your own story as it unfolds.

"My introduction to wargames happened about ten years ago. It was *Kriegspiel* by Avalon Hill. My current favorite is *Awful Green Things from Outer Space* (TSR). The rules have a wonderful imagination that has been invested in the situation so that when you actually start play, you're full of all the craziness that goes on aboard the *Znutar.* It's very engaging and very adroit and you can actually play without first having to take a seminar. For the same reasons, my favorite SPI game is *Creature That Ate Sheboygan.* It's fun to cook up your own monster and set him loose."

While he does enjoy boardgames, Barwood is far less interested in fantasy role-playing. "I'd rather write a role-playing movie. My kids, on the other hand, seem very interested in studying the various *D&D* manuals endlessly, picking up all those pseudo-factoids. In *Dragonslayer* we don't have a lot of fantasy elements — just the dragon and magic, and the fact that there is a displaced setting in which it occurs. We don't have trolls, elves, dwarves, walking trees, or finding out what happens by eavesdropping on the conversations of birds. One of the problems with role-playing games is that they devalue the currency too much, and *D&D* is the worst offender. They have four jillion things coexisting. For me, the imaginative world that produces *Dracula* has nothing to do with the world that produces dragons, and to put them all together screws everything up. Nothing makes sense anymore. It would take someone very great indeed to be able to put those elements together in a coherent manner. Fantasy role-playing games put me off because they are a big mish-mosh."

There is one thing about both gaming and the science fiction/fantasy genres that Barwood finds most delightful. "*Escape!* One of the highest motives man has. The world is too much with us; there's an opacity to actual experience that's boring and baffling at the same time. Drama and literature try to liven things up and make sense of life, but realism (though I love it) has its limits. It's much easier (and a lot more fun) to try to understand the Human Condition if you're creating a perilous realm somewhere rather than modeling reality — where one day you step into the street, get hit by a car, and you're dead before you ever figure out what it all meant. So, if you're going to escape, you might as well do a thorough job of it. I certainly don't want to be a trustee in the prison-garden of realistic fiction. Almost any kind of story which makes a bigger leap is of interest to me.

"I feel escapism is a truly noble impulse. And I think it operates just as well when you're sitting there with your little counters planning a laser attack on the *Pandora* or reading *Midsummer Night's Dream*, or outwitting Vermithrax in *Dragonslayer.*"

As to the future, Barwood says about planning a sequel, "I'm not planning anything. I'm totally exhausted. I've been working on this film for two years. Even though movies aren't going to solve the world's troubles, they are still awfully hard to make and they take a *lot* of work. I'm ready to go lie down.

"One day my spirits will revive and I'll wake up and look around and so will my partner, and we'll figure out what comes next. If the movie turns out to be an enormous success, perhaps it will plan something for us." ■■

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The Sword and the Stars

by Justin Leites and Eric Smith

Introduction

The following two articles are contributions by the designer of the game, Eric Smith, and the senior playtester, Justin Leites, who ran the inhouse testing of the game during its development. In both articles a term in brackets always refers to a term used in *Empires of the Middle Ages* while a term without brackets refers to *The Sword and the Stars*.

Playtester's Notes

The Sword and the Stars is a new, multiplayer game of galactic empire building, based on SPI's game *Empires of the Middle Ages*. Players begin play of the game with several stellar systems [Areas] in their empires, and through diplomacy or conquest they attempt to enlarge their domains at the expense of their neighbors.

The game mechanics of both simulations are similar. A player first draws an Event chit [Event card], which is either played immediately or held for later use. The events will sometimes help, sometimes damage the various empires, and may help an opposing player as well as the player who drew the chit. A player is then allowed to play up to five Year Cards, which in *Sword* represent the passage of 4 earth years each. By playing the cards, a player attempts to improve his domain. Each card allows the player to undertake one Operation [Endeavor]; these include: Conquest, capturing a system that is either independent or belongs to another player; Raid [Pillage], attacking a system to gain income while lowering its Tech Level [Social State]; Communicate [Diplomacy], attempting to set up trade and diplomatic connections with other star systems; Govern [Ruling], improving a player's system by quelling unrest or raising its Tech Level; Intercept [Defense], interfering with another player's Conquest Operation; GuardianWeb [Fortification], improving the defenses of a system; and in *Sword* only, StarGate, building a transmitter that improves interstellar travel.

Each player may play some or all of his Year Cards in his turn, or save some to use against other player's activities. The success or failure of an Operation depends on the Sector Levels [Leader Statures] of the government of the player's empire. These Sectors are Military [Combat], Administrative and Diplomatic and function the same in both games. After a number of game-turns, victory is determined.

All the playtesters for *Sword* were already familiar with the *Empires* game system. Consequently, in the first few games

all the players used *Empires* strategies. After several games, however, we realized that totally new approaches were needed. The strategic problems that confront players in *The Sword and the Stars* are quite different from those in *Empires*.

The major change in the game system is the introduction of the StarGate. In *Empires* a player is allowed to attack only those areas that are adjacent to a part of his empire, while in *Sword* a StarGate allows a player to attack *any* system on the game map. First, a player must have a star system with a Tech Level of two or three (three is the maximum in the game) before he can utilize the StarGate. Once it is in play, a player is free to use it to attack, raid, govern or convert any other system he desires; range has no effect. Use of a StarGate increases the cost of an Operation, but the ability to hit any system is a major change in play.

One advantage of the StarGate is that it eliminates the inevitability of war. In *Empires*, the only way to expand one's empire usually involved attacking an adjacent player's areas and thus touching off war as a consequence. In *Sword*, a player can use a StarGate to conquer a neutral system on the other side of the map. Without the StarGates there would be a greater tendency towards war, since the *Sword* map is smaller than the *Empires* map.

Another advantage to having a system with a high Tech Level is that it allows a player to bring his other systems up to a high Tech Level quickly. Unlike *Empires* where the various areas in a kingdom can be no higher than two levels above Social State norm, in *Sword* there is no limit. A player who is doing well in *Sword* will have many systems at Tech Level three. As a consequence, GuardianWebs [Fortifications] are easier to build and thus rebellions are prevented or made less likely in those systems which are taxed. A healthy treasury also makes it easier to defend against Outworlders [Magnates], a group of beings who take control of a system and begin to attack neighboring systems.

If war finally does arise, the control of a StarGate is vitally important, for it allows a player to attack the home system of another player without prior warning. In *Empires* a player had to first attack the periphery areas of an enemy kingdom before he could capture the enemy's court area. In *Sword* a player can go right for the jugular, and the entire war can be resolved by the play of one or two Year Cards, with individual attacks becoming much more exciting. The home systems are vital targets since they are generally the systems that contain players' StarGates and because they guarantee a player income each turn (the home system can never revolt). The loss of the home system can often send a player into desperate poverty for centuries.

For players lacking in income, a raiding Operation is a particularly useful method of generating Resource Points [Gold]. Although many playtesters and *Empires* players frown on the raid as "ungentlemanly," a StarGate will help a player make an extremely profitable raid on such systems as LA'DAU or Fontain-Grelot (both neutral but profitable). Since each system has a Resource Value as well as a Tech Level, the most profitable raiding systems are not necessarily the most difficult ones to raid. The Resource Value is then added to a die roll and the result is found on a table effecting in 0 to 5 Resource Points gained.

Another tactic which most novice players will not use is the Communications Operation. There are two possible results from such an operation. First, a Trade Connection may be formed which may then be used to develop a Treaty; a player receives extra Victory Points at the end of the game for developing Treaties with the systems he owns. Second, a bloodless diplomatic conquest of a system may occur, which neither puts it in revolt nor reduces its Tech Level. Communications is very cost effective in both time and money for a player with a high Diplomatic Sector rating.

One feature of *Sword* that many players will probably not use to full effect until they are more thoroughly experienced with the game is the Confederation of Worlds. The fifteen systems in the center of the map belong to a Holy Roman Empire of sorts. A session of the Confederation is called when one player wishes to limit the success of another player's Operation or when certain triggering functions occur. The Confederation may vote to expel a player, in effect alienating him from all the rest of the Confederation systems and systems owned by other players, thus increasing his difficulty in achieving success in the game.

The political pull within the Confederation depends on the number of systems

within the organization a player controls as well as his Diplomatic Sector rating. The outcome of a Confederation vote is determined by a simple majority of votes. Once a player is expelled from the Confederation, he may not take part in any further negotiations in the Confederation until reinstated, a highly infrequent event in our games.

Another unique aspect of the game is that players may vote to end the game after a certain number of game turns have passed. Most scenarios have two end times listed, one is maximum limit and the other is the number of game turns played until voting begins. A player who is far ahead in the game can often vote an early end to play. This vote is open to all players, but Confederation members receive more votes for each Confederation system they control.

The Sword and the Stars offers players an interesting strategic overview of the difficulties inherent in building and maintaining a galaxy-wide empire. Though it does have many similarities to *Empires of the Middle Ages*, it definitely has its own subtle differences that give it a unique flavor. The *Empires* game system has proven well able to spawn an offspring with a distinctive science fiction character and interest.

Justin Leites

Designer's Notes

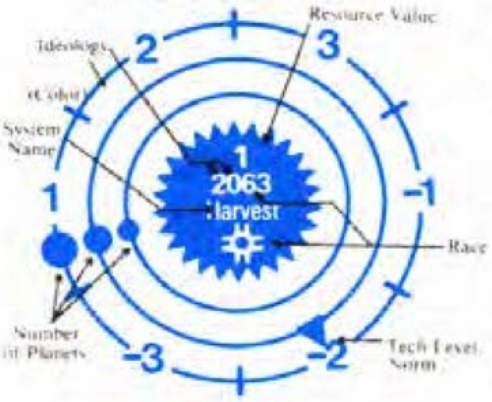
Empires of the Middle Ages was released in the spring of 1980. The reaction of the public and game critics was immediate and enthusiastic. Unscheduled all night games of *Empires* sprang up at Origins 80 and other conventions held during the summer. In August it was decided that a science fiction game using the *Empires* system should be designed and the project was turned over to me. My only directives were to reduce the number of card decks from two to one, reduce the number of counters from 600 to 400, and reduce the map from full to half-size. These changes would reduce the cost of the game considerably, thus allowing it to reach a larger market than the original *Empires* game. Significantly, the number of rules pages was not decreased; in fact, I was given free license to expand the rules if I deemed it desirable. The final object of the game would be to reduce the game's price while increasing the game's value to the players.

The first thing I did was to play *Empires* and study its rules until I knew them backwards and forwards. Then I called several groups of gamers, who played *Empires* a lot, to ask their opinion of that game. I asked them what they liked best, and a clear consensus was that they all liked the way the diplomacy and player interaction worked. They also liked the simple economics, random events and the quality of the map and physical components. The magnates and raiders were considered essential and should not have been optional in their opinion.

On the negative side, everyone agreed that the scenarios were too long and that some kingdoms had grossly inadequate chances to win (chalk one up to historical realism). Some players were also uneasy with the more picayune historical limitations and chrome. The overall opinion was that the game was great; they played it often, they never grew tired of it and they expected to continue to play it indefinitely. Some of them expressed unease when I told them that I was working on a science fiction version of the game, they were afraid that I would change the system for the worse.

With my mind thoroughly steeped in the opinions of actual *Empires* players and after my own appraisal, I sat down to design my game. My first basic design decision was to change very little of the original design. I decided to modify the existing mechanics to fit an interstellar situation, but to keep real changes to a minimum. I wanted *Empires* players to be able to get into *Sword* with a minimum of effort and yet have a different experience, not just a rehash of the original. I changed the names of mechanics which are virtually identical in both games and modified the Raider and Magnate rules. I also began to think about how I could create a diplomatic entity by modifying the existing Church mechanics. I created the Confederation of Worlds and began to write rules.

SAMPLE SYSTEM REGISTER



My second basic decision was to change drastically the way *Empires* played. I wanted *Sword* to have new strategies and a different flavor. At this point I sat down with John Butterfield, another SPI designer. John had designed *Freedom in the Galaxy* and was currently working on *Universe* and *Voyage of the Pandora*; he is an encyclopedia for science fiction literature and game design. We brainstormed over the design of the *Sword* map and came to the conclusion that it should be a modified hex grid to allow the possibility of several types of movement. John also recommended using circular stellar readouts as he had done in *Freedom*, which I agreed was a good idea. I thought out the different possible movement systems and decided to allow Operations [Endeavors] to be undertaken against adjacent star systems and against others anywhere on the map by use of a StarGate to "jump" there. It later turned out that this one addition to the game system was all that was needed to alter play and strategy radically.

I then began to work on the scenarios. It was obvious that I had to reduce the length of the game and include at least one endless campaign game. I also reduced the maximum number of players from six to five since the *Sword* map would be half the size of the *Empires* map. Once I had committed myself to locating five separate empires in discreet areas on a half-size map, the spiral quadrant layout almost designed itself. I made it such that the number of players in a game determines which part of the map is used during play.

I designed one scenario, called the Five Empires Stalemate, and began testing the game. As we tested, I began to rewrite the entire *Empire* rules booklet section by section. I fed the new rules to my testers as I finished them. Immediately it became obvious that the Confederation rules I wrote in the beginning would have to be expanded. With the help of my testers we thrashed out a kind of forum mechanic, or Holy Roman Empire as they called it. We continued to work on this rules section all through development; indeed, the final additions to it were made *after* the game had been turned into the art department. We were very happy with the rule for voting to end the game. I have used a version of this idea in other games I have designed and developed, such as *Bulge*, *Pea Ridge* and *The Alamo*. In *Sword*, I continued to explore another way to keep the players in uncertainty as to when the game would end.

During playtesting I created the mythos of the races and ideologies of the various star systems and created the other scenarios, with the help of Justin Leites. Towards the end of testing we began to work very hard on the Galactic Cycle campaign scenario. The scenario was very wild and didn't resemble the other scenarios at all. I couldn't believe the strange empires which were being created when the players had the freedom to do what they pleased. Once the mechanics for this scenario were finished, I prepared the final draft of the rules and turned the game over to the art department. We continued to test the game until the last day before the game was sent off to the printer.

As a designer I am very happy with the way *The Sword and the Stars* has turned out. I hope you enjoy playing the game.

Eric Lee Smith

Sword and the Stars Addenda

Inadvertently, a rule about the Draka was left out of the rules. Also included is an optional rule which will make the game more exciting.

[21.38] (*Addition*) When the Draka enter play, the Tech Level of Harvest is immediately raised to 3. Should the level ever fall below 3, it is increased by one at the beginning of each Round until it again reaches 3. When the Draka leave play, the Tech Level of Harvest is immediately reduce to a Level of minus 2.

[15.4] INTERCEPTING BY STARGATE (OPTIONAL RULE)

A Player may intercept *any* Enemy Raid or Conquest Operation attempted anywhere on the map so long as the Intercepting Player owns a StarGate which is located on his Seat System and the Seat's Tech Level is **2** or **3** and his Military Sector Level is **5** or **9**. More than one Player may intercept the same Operation (see 15.31). **Important:** A Player who uses a StarGate to Intercept may not expend more Resources in the Operation than the combined sum of his Military Sector Level and the Tech Level of his Seat System. ■■

SCIENCE FACT

Lasers in Space

by John Boardman, Ph.D.

Ever since the origin of science fiction magazines in 1926, a popular weapon for spacemen has been the "disintegrator ray." Small, hand-held models substituted for pistols in the sort of space epic which was really just a re-written Western romance, moved from the deserts of Arizona to those of Mars and substituting greenskins for "redskins." Spaceships were armed with larger versions of the same blasters, and battles took place as spaceships tried to evade their enemies' rays and get their own aimed properly. Edmund "World-Wrecker" Hamilton carried this sort of weapon to its ultimate limit in his 1947 novel *The Star Kings*; a ray mounted on the spaceship of the Galactic Empire proved capable of destroying space itself, including an enemy battle fleet that occupied that space.

The "disintegrator ray," or simply "ray," was badly overworked in the science fiction of that era. Eventually fans began calling it "something you can't see that turns something you can see into something you can't see." In *Astounding Science Fiction* for August, 1939, an exiled German rocket expert named Willy Ley proved to the satisfaction of most of the current science fiction readers that it couldn't be done anyway. In order to pack a wallop such as the pulp fiction attributed to it, such a ray would have to be made of coherent tight-beam radiation. Some way would have to be found that would take the originally random radiations from the ray's source (usually "charges" inserted into the blaster-like shells such as are loaded into a fieldpiece) and make them coherent with one another. Ley wrote that this would be impossible, and that space warfare would probably take the form of spaceships firing solid projectiles at each other, much like contemporary battleships.

Considering the technological capabilities of the time, Ley was quite correct, but a 1916 paper by Albert Einstein had already pointed the way towards making rays of coherent light a feasible weapon. Einstein showed that if a solid substance is struck by a photon of a particular frequency, an electron in it can give off another photon of the same frequency, thus reinforcing the incident beam of photons with another photon of the same energy. (The energy of a photon, or unit of electromagnetic radiation, depends only on its frequency.) To do this, the solid substance must be energized; some of this energy will appear as coherent emitted photons of the same frequency as the incident photons.

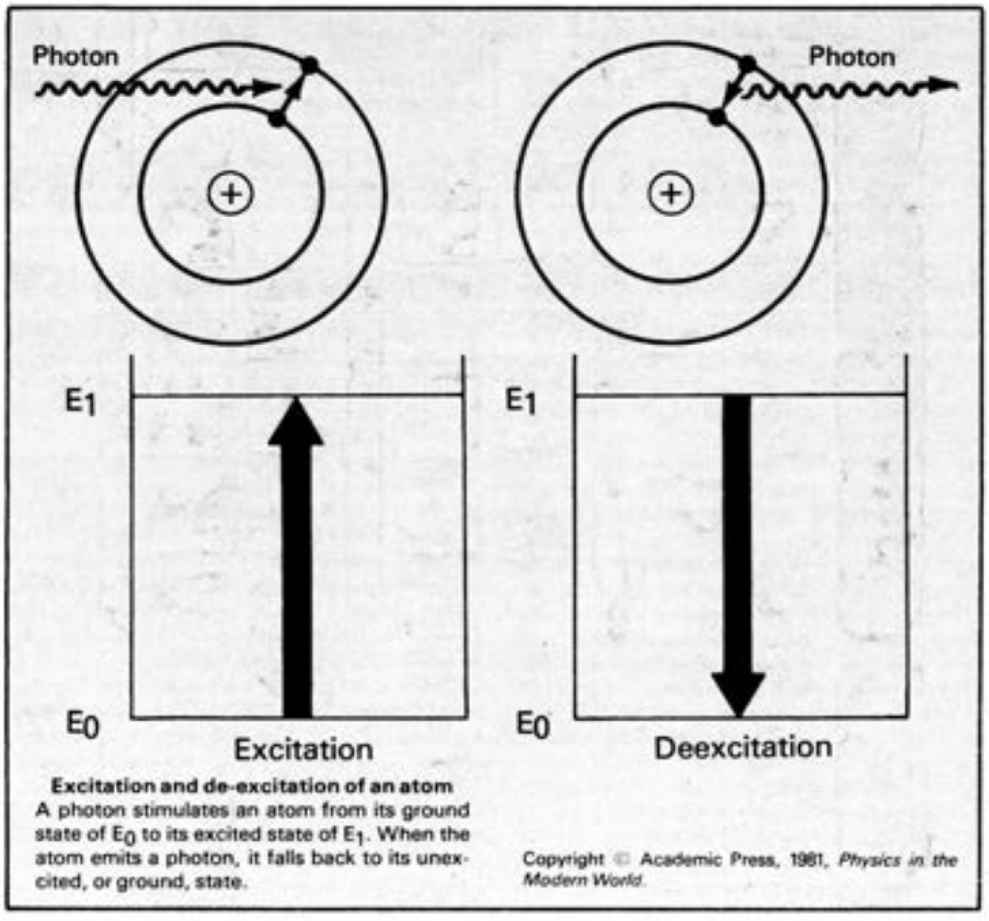
It was not until the early 1950's that practical applications of this suggestion were sought. For one thing, it would cause the amplification of weak radio signals, since the solid would be stimulated to emit the same signal in a more intense form. The theory behind these ideas was worked out by Charles Townes in the United States, and independently by N.G. Basov and A.M. Prokhorov in the Soviet Union.

Townes and his research group put together the first practical application of this principle at Columbia University in 1954. It was called *M*icrowave *A*mplification by *S*timulated *E*mission of *R*adiation, or "maser." The waves used had a frequency of 23,870 Megahertz — approximately 100 times the frequency of channel 13 on a television. The wavelength was 1.25 centimeters. Ammonia molecules were used to intensify the radiation by stimulated emission. In 1960, the principle was extended to visible light; the resulting device was called a "laser" for *L*ight *A*mplification by *S*timulated *E*mission of *R*adiation.

In order for the laser effect to occur, most of the atoms in the amplifier must have electrons in an excited state. Since the unexcited, or "ground," state, is more usual, such a situation is called an "inverted population." As they are stimulated to give off photons of the same frequency as the incident photons, the electrons in these atoms fall to their ground state. Energy must therefore be supplied to keep up the inverted population, and this excited state must be stable enough to stay excited. For example, ammonia was chosen for the first maser because it has a fairly stable excited state at 0.0001 electron volt above its ground state. This energy corresponds to the emitted frequency of 23,870 Megahertz.

Since all the emitted photons have the same frequency and are emitted by the same process, the emerging beam is highly coherent and of one frequency only, or "monochromatic." This radiation can be concentrated into an extremely narrow beam, with an energy concentration which can be as high as 1,000,000 Megawatts per square centimeter. Since most of the energy input of a laser goes to keeping its electrons in an excited state, the laser is a device of rather low efficiency — 2% at best. However, though the output energy is only a few percent of the input energy, it is very highly concentrated and coherent.

There is even talk now of exotic forms of lasers, such as a X-ray and a gamma-ray laser. The shorter electromagnetic radiation is, the more energy it carries. The visible light laser is much more powerful than the maser, so it should seem that X-ray or gamma ray lasers could carry more energy still. Research, much of it classified for military reasons, is now going on in this particular area of inquiry.



Excitation and de-excitation of an atom
A photon stimulates an atom from its ground state of E_0 to its excited state of E_1. When the atom emits a photon, it falls back to its unexcited, or ground, state.

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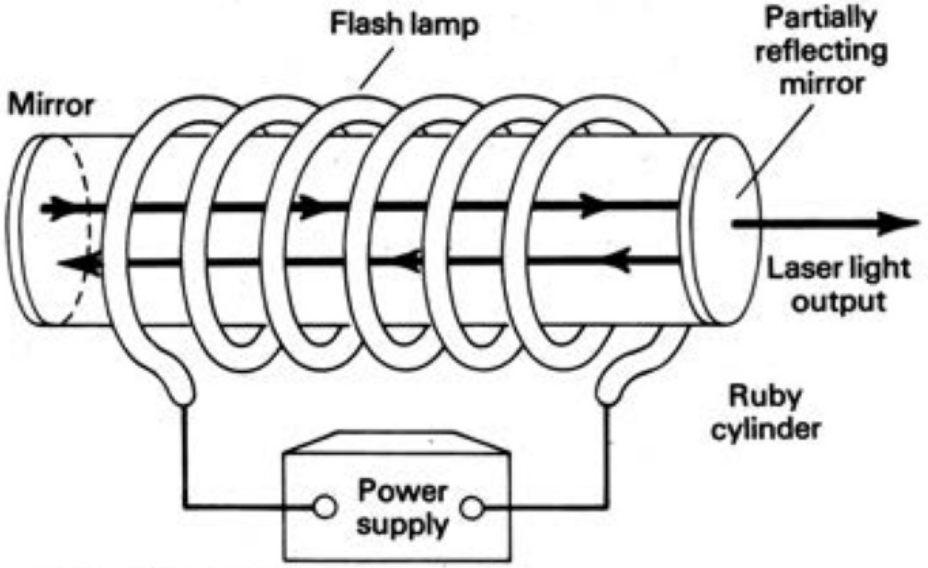
An X-ray laser would first have to pump energy into the atoms of the heavier elements, and then stimulate the emission of X-rays from these atoms as the electrons in their lowest energy levels fall back to their ground states. The main problem is that the excited electrons in these heavy atoms give up their excess energy so fast a pumped-up X-ray laser might lose most of its energy through spontaneous emission, before the stimulated emission could be triggered.

The even more energetic, and far more hypothetical, gamma-ray laser would have to have the "pumping" done in the internal energy levels of the atomic nucleus. Unfortunately, these transitions are even faster than those which produce X-rays. While a gamma ray laser is in principle feasible, a great many technological developments would have to occur before a working model could ever be produced.

The first laser, designed in 1960 by Charles Townes and Arthur Shawlow, used a ruby crystal as the amplifying device. A ruby is a crystal of aluminum oxide, with small amounts of chromium which give the crystal its characteristic deep red color. The energy levels within these chromium atoms have a property that enables them to store energy until the incident photons can cause it to be released. White light is supplied to "pump" up the chromium atoms until they form an inverted population. Most of the frequencies in the white light are capable of putting the ground-state electrons of the chromium atoms into two high-energy bands. These bands are broad enough to store quite a wide range of electrons of various energies, most of which eventually drop to a narrow band 1.79 electron volts above the ground state. This energy corresponds to light of wavelength 693.4 nanometers, which the human eye detects as "ruby red."

The laser can be aimed if the ruby crystal is formed into a cylinder whose ends are precisely parallel to each other. One end is covered with a fully reflective mirror, and the other with a partially reflective mirror. A high-energy discharge lamp in a helical form winds around the cylinder, providing the energy that pumps the chromium atoms up to their excited states. As soon as one electron drops from the first excited state to the ground state, the laser action is triggered. Those photons which hit the mirrors are reflected back, and stimulate more emissions of this same frequency of red light. A fraction of this radiation escapes through the partially reflecting mirror, forming a narrow beam of coherent high-energy red light. The rate of 1,000,000 Megawatts in each square centimeter of beam sounds appealing as an energy source, since this is approximately ten times the total electrical generating capacity of the United States, but the burst only lasts for one millionth of one millionth of a second!

Humans are not the first to create this effect for it has been observed that stimulated emission is going on in nature as well. Maser radiation has been detected by radio telescopes, coming from hydroxyl molecules in interstellar space. The pumping mechanism in this case is infrared radiation from nearby stars, which excites hydroxyl molecules into a nearly stable excited state. If a photon of the right wavelength comes along, a natural maser emission occurs, and other hydroxyl molecules in the same sparse cloud of interstellar gas also begin emitting photons of the same wavelength. Radio telescopes detect this emission as microwaves. It is also known from molecules of water, silicon monoxide, and even methyl alcohol, a rather sophisticated molecule to expect to find in space. Some 300 natural hydroxyl masers are known in space. Most of them are in regions which produce virtually no visible light, but some are in the outer layers of the bright, cool stars of the red giant class.



Schematic diagram of a ruby laser.
The laser beam emerges from the end that has been coated to form a partially reflecting mirror.

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One of the first practical applications of the ruby laser began in 1964. A detached retina in the eye can be "welded" by a laser to the choroid surface below it, thus restoring normal vision. Since then, lasers have also been applied to brain surgery. Laser beams are so tight that they can carry a great many communications channels. A mirror, placed on the moon by American astronauts in 1969, is capable of reflecting a laser beam from earth, and fluctuations as small as 15 centimeters in the earth-moon distance can now be measured. The laser also has its uses in laboratories on earth, where they make possible the measure of distances to precisions of 3 nanometers (3 billionths of a meter), and thus make possible the more accurate measurement of physical constants. The earth's gravitational field can now be measured to a precision of one part in 100 million.

The coherence of laser light makes it possible to project three-dimensional images. Information of the three-dimensional position of an object can be recorded on suitable film. A laser beam is then directed through this film, and the image is projected in space. The first really public application of "holography" took place in the window of Cartier, the famous jewelry firm, in 1972. Crowds of usually unflappable New Yorkers stopped traffic on Fifth Avenue to see a woman's hand, emerging from darkness, holding up a diamond necklace. One passer-by attacked the image with her umbrella, declaring it to be "the devil's work."

If the devil is involved in laser technology, he is far more likely to be considering its military applications, the realization of the "disintegrator ray" of pulp-age science fiction. A tight, coherent, high-energy beam of photons would make an excellent weapon. The United States is now spending about $200,000,000 a year in developing such a weapon; according to testimony presented late last year to the Senate Commerce and Transportaion Committee by 27 scientists and military specialists, the Soviet Union is spending from three to five times as much. Referring to lasers with power less than 20,000 watts, the committee's report stated that "low-power laser research since 1960 has contributed more than any other field to improving military hardware." Since the laser was only invented in 1960, its military development was obviously being considered from the very beginning.

Whether high-powered military lasers are feasible depends on a number of technical questions. A recent MIT report expressed some skepticism about the feasibility of high-power laser warfare among satellites. Four problems have to be dealt with: the design of the lasers themselves, including an adequate source for the pumping energy; the optics needed to guide the beams to their targets; tracking devices needed to follow moving targets; and the placing of the satellites in orbit. One hundred tons of equipment would have to be lifted into orbit for each laser-armed satellite, at an estimated cost of $12,000,000,000 for each one. And the recent experience of the US Armed Forces indicates that such a cost estimate is never likely to be in error through being too large.

Furthermore, a laser-armed satellite is vulnerable. It could be effectively blinded by a laser beam, from another satellite or from

the ground. Alternatively, if a spy gets hold of the codes, false instructions could be sent to it. Even though the United States broke the Japanese naval code during World War II, no one at Pearl Harbor would have tried to instruct the *Yamato* to shell Yokohama. But one hard-working American agent in Moscow might be able to provide the information that could lead to a Soviet satellite hitting Vladivostok with lasers. (Or, *mutatis mutandis*, Omaha.)

Laser weapons would be more feasible if mounted on aircraft, or on the ground, according to the MIT report. But better tracking equipment than we now have would be needed before airplanes can usefully be furnished with laser weapons. Lasers fired from the ground would be dependent upon good weather, and a general of artillery might quite reasonably point out that his time-tested fieldpieces can operate in heavily overcast conditions. In any possible future war the use of artillery-delivered smoke would further limit any effective use of laser weaponry.

Still, a sufficiently powerful laser beam can stop anything – ICBM, tactical missile, airplane, satellite, or a platoon of religious fanatics with Kalashnikovs. The Senate committee's recommendation was a doubling of the amount presently being spent on laser weapon research and development. The present Senate is even more inclined than its predecessor, for which this report was made, to implement this request. The committee chairman now having jurisdiction is Harrison Schmitt, a former astronaut and consequently an enthusiast for a strong American military posture in space.

Another use of lasers in space has been suggested, which is further from realization but of greater potential use to humanity. Solar power as a solution to the energy shortage is usually thought of in terms of collecting the rays of the sun as they fall on the earth's surface. But this method requires good weather, and ignores the fact that the big yellow thing up in the sky is shut off an average of twelve hours a day. If the power generated by the sun during the day is to be stored for use at night, the storage facilities will either lose a lot of the energy, take up a lot of space, or be quite dangerous. (The people who object to nuclear fission plants are not going to take too kindly to the presence of large tanks of hydrogen at a solar power station.) Furthermore, solar cells cover a lot of land that might be needed for agriculture or as a scenic attraction. If there is objection to ruining the terrain by strip-mining, there would also be objection to covering it with acres and acres of solar cells.

A solar power station on a satellite would eliminate most of these objections. In space, it would be exposed to the sun's rays all the time if its orbit did not take it through the earth's shadow. Neither safety nor esthetics would be a consideration; if it exploded no landscape would be devastated — not that it would be likely to explode. The energy could be sent down to Earth by a laser or microwave beam, though the beam would have to be kept very tight, and aimed with an extremely high degree of accuracy. The beam would be locked on a target facility which could convert the energy into electrical energy and feed it into the already existing network of long-distance transmission lines. Several alternate target facilities might be needed if the rotation of the earth carried one such site away from the range of the satellite. A synchronous-orbit satellite would, of course, always be on the same side of the earth as the target facility, but it would have to be at such a great distance that the beam would be unnecessarily spread out.

Such a technology would make solar energy available on a scale not feasible for earth-bound solar power stations, and would make it a major source of energy for human use. If suitable guiding and tracking devices can be developed, solar power from an earth satellite could be made nearly as safe as nuclear power, and with a much better public image.

In the April 1941 issue of *Astounding Science Fiction* appeared a short story, *Reason*, by Isaac Asimov, then a 21-year-old novice writer. The story takes place on a solar power station in orbit around the sun, which beams solar energy to earth and other planets. The technology is taken for granted, and the story concerns the transfer of the station from human to robot control. When the executive robot seems to be malfunctioning, the humans worry that the tight beam will escape its target and cause devastation on the surface of the earth. All, however, ends well despite the robot's adherence to an infuriatingly rigorous Cartesian logic that causes him to create a private religion about the function of the power station. For a story written twenty years before the invention of the laser, it is a remarkably accurate forecast of a project that now seems within the range of feasibility. ■■

The Nature of Physics, Peter Brancazio. New York: MacMillan, 1975.

Physics in the Modern World, Jerry B. Marion. New York: Academic Press, 1981.

Exploring the Cosmos, Louis Berman and J.C. Evans. Boston: Little, Brown, 1980.

New Scientist, 1 and 8 January 1981.

Lasers in Space

The long-loved "disintegrator beam" of space operas might be expected to become a reality someday, if laser technology keeps advancing. There are, however, certain problems with the laser as weapon, even in the vacuum of space.

The laser has long been known as a cutting tool, its first such demonstration occurring in 1968, when a carbon dioxide laser 54 meters long and with a 2.5 kilowatt beam was used to burn a hole in a quarter-inch steel plate. This demonstration set off much controversy over the laser as weapon of war, though a 54-meter tube would be a rather cumbersome thing to carry around a battlefield. Further developments have made the power sources for lasers more compact; compared to the propellants of bullets and shells, however, a laser is still a device of low efficiency.

A laser also tends to spread out just as a flashlight beam does. The dispersion (angle of spreading) is much smaller, but it does exist. Laser dispersion is measured in milliradians or microradians rather than in minutes or seconds of arc (1 second of arc is just under 5 microradians). Over an extended distance, a laser beam can become quite dispersed.

The width of the beam at the target can be obtained by multiplying its range by the dispersion in radians. For example, a laser of dispersion 0.1 microradian aimed at a target 2 kilometers away will have a width at that target of 2,000 meters times 0.0001 radian, or 0.2 meter (20 centimeters). At larger distances, say between long range space fleets, the spread of the energy of the beam could be over so large an area that the damage, if any, would be considerably reduced.

The most powerful continuous beam lasers under present-day consideration might be able to deliver 20 kilowatts of power, though such lasers would be very equivalent of a battleship. Such a laser with a dispersion of 10 microradians (a figure within reasonably possible projections of present-day capability) would deliver a beam 1 centimeter wide at a target one kilometer away. In space, without a dispersing medium, such a beam would indeed carry a great deal of energy. Bombarding the earth from the moon with such a beam would be another matter altogether. The beam would then spread out to a width of 4 kilometers, and its effect would be negligible. (Pulsed lasers offer much larger energies, but for very short periods of time.)

To determine the amount of power that strikes at a specific distance, use the following equation: $4P/\pi r^2\Theta^2$, where P is the power of a laser with dispersion Θ aimed at a target at a distance of r. The above formula gives you the power per unit area, and the width of the beam at the target is $r\Theta$. By comparison, when the sun is exactly overhead it illuminates the earth at a power per unit area of 1,387 watts per square meter.

The accompanying table shows the amount of power per square meter of a 20 kilowatt laser with a dispersion of 10 microradians (about 2 seconds of arc).

DISTANCE TO TARGET (IN KMS)	WIDTH OF BEAM IN METERS	INTENSITY AT TARGET (IN WATTS/m^2)	× SUN'S INTENSITY[1]
1	0.01	2.6×10^8	1.8×10^5
10	0.10	2.6×10^6	1.8×10^3
100	1.00	2.6×10^4	1.8×10^1
1,000	10.00	2.6×10^2	1.8×10^{-1}
10,000	100.00	2.6×10^0	1.8×10^{-3}
100,000	1,000.00	2.6×10^{-2}	1.8×10^{-5}
400,000[2]	4,000.00	1.6×10^{-3}	1.0×10^{-6}

Notes: 1. This column represents the power received by the target as a multiple of the sun's intensity as felt on Earth's surface (1387 watts/m^2). 2. This figure is approximately the moon's distance from the earth. ■■

Facts for Fantasy

by Susan Shwartz, Ph.D.

God of Beginnings

As most people know, Janus was the Roman god whose name provided the root for the month of January. But he had many other meanings in Roman mythology as well.

To start with, not even the Romans knew the origin of his name. One of the most inspired guesses suggested that its root form was *Jana*, also used sometimes instead of Diana (for the goddess of the hunt). Because *jana* derives from *dius* (the same root as the Indo-European *Dyaus* meaning Zeus, god of the lightning), scholars tend to think that Janus was a solar god before he was anything else.

His functions in Roman mythology and politics were wide. He was first of all the god of doorways, whether of public gates or private doors. Since he was commonly depicted with two faces, he could observe the interior and exterior of a house or city. His emblems were the key to open and close all doors and the rod to drive away interlopers.

Since he was god of the gates, he became the god of departure and return, and therefore, the god of all communications. He was even supposed to have invented navigation and to protect all ports.

As a solar god, he watched over dawns and, as a god of beginnings, over all human enterprise.

Perhaps because his cult is said to have been instituted by Romulus, the founder of Rome, or Numa Pompilius, his successor, the Romans placed his rituals at the forefront of all their religious observance — even ahead of Jupiter. He was honored on the first day of every month.

His temple in the Roman Forum had gates which were open in time of war and closed in the occasional time of peace — once during Numa's reign, three times under Augustus, and then under Nero, Marcus Aurelius, Commodus, Gordius III, and in the Fourth Century. Given that Rome was allegedly founded in the early Eighth Century B.C., we can see that it was very seldom at peace.

Larousse Encyclopedia of Mythology

Manzikert

For centuries, the Byzantine armies were the most powerful on earth. Byzantium had the reputation — and deservedly so — for hiring the best mercenaries, equipping and paying them well, and using them skillfully. All this came to an end in the Eleventh Century.

The Empire's principal recruiting ground had been Armenia. After its *thematic*, or provincial, armies were disbanded, however, Armenia fell into the possession of the Seljuk Turks by 1067. From this point on, the Turks began to move continually and purposefully into Anatolia, the heartland of the Byzantine Empire. Imperial forces soon realized that they could protect their eastern front only by reconquering Armenia. In 1071, they saw their chance.

In that year the Seljuk Sultan Alp Arslan (= Mountain Lion) set out for Syria and attacked, along the way, several Byzantine towns. His lieutenant Afsin did the same thing and took the fortress of Manzikert in January of that year. Then the Sultan's forces became snowed up in the Tzamandus Pass, unable to move until the spring thaw.

After he let Alp Arslan advance, the Emperor Romanus IV Diogenes prepared to attack the Seljuk's rear in force. He assembled a huge army at Erzerum, some eight miles from Manzikert. While historians argue on the size of this army (estimates range from 200,000 to one million men — and even accounting for artistic exaggeration and boasting, that's a big army!), we know it consisted of Byzantines, Russians, Khazars, Alans, Uzes, Armenians, Germans, and Normans. The Emperor was accompanied by part of the Varangian guard (principally Scandinavians, with some English) and with cavalry of the Tagmata, aristocrats among the Byzantine regiment.

Along with the army came a vast number of engineers, laborers, and servants to operate the siege-engines. So perhaps only forty percent of this force were actual combatants. Of this number, only a fraction were Byzantines or regular army. The rest were poor in quality — ill-trained, ill-

Science for Science Fiction

by John Boardman, Ph.D.

The Phantom Planets

The usual astronomy text will list the nine planets of the Solar System in their known order outward from the Sun, from Mercury to Pluto. Yet from time to time others are reported, or their existence is inferred by their presumed effects on the known planets. Only three times have these reports resulted in the genuine discovery of a full-fledged planet: Uranus in 1781, Neptune in 1846, and Pluto in 1930. Sometimes the object has been too small to be a planet in good standing, and is determined to be a mere planetoid (or "asteroid"); the first of these was Ceres in 1801, and the most recent was the eccentric Chiron, which was found in 1977 in an orbit between those of Saturn and Uranus.

Many other such reports have not held up on further examination. In 1723, a German astronomer found an object in the Big Dipper which he proclaimed to be a newly discovered planet, and which he named *Sidus Ludovicianum* in honor of his patron Landgraf Ludwig V of Hesse-Darmstadt. Unfortunately for the celestial reputations of both men, the object turned out to be a mere star.

Unpredicted irregularities in the motion of Mercury were responsible for another "phantom planet." A century after Sir Isaac Newton put forward his law of universal gravitation, Mercury's motion seemed not precisely to obey it. The French astronomer Urbain J.J. Leverrier, who had predicted Neptune's existence from irregularities in the motion of Uranus, tried to do the same thing for Mercury, and in 1859 claimed that a planet, or group of planets, closer than Mercury to the Sun was responsible. This planet was given the name "Vulcan," and efforts were made to find it. Shortly afterwards, a physician and amateur astronomer named Lescarbault claimed to have seen Vulcan as it made a passage across the solar disk. After examining Lescarbault's rather primitve equipment and calculations, Leverrier announced that Vulcan had a mass about one three hundreths of the Earth's and went around the Sun once every 19.7 days. When this was announced, an English astronomer named Scott said that *he* had discovered this planet in 1847, and that its mass was nearly as big as Earth's. There followed over twenty years of controversy, mostly in the tone of "I saw it!" "No, you couldn't have!"

The controversy faded with the deaths of the major participants, but was not finally resolved until 1916. In that year, Albert Einstein published his general theory of relativity, which modified Newton's law of universal gravitation and accounted for the anomaly in Mercury's motion. The objects which the 19th Century astronomers had seen against the Sun's disk were almost certainly small sunspots.

The only other place in the Solar System where there is "room" for another planet is beyond Pluto. Unless someone is so fortunate as actually to see it, such a planet could be found only from its gravitational effects on known planets or on comets. Since comets are so much smaller, the effects on them would be more obvious. As far back as the mid-19th Century, an 18-year-old Brazilian military cadet named Sousa wrote a paper suggesting a search for comets whose orbits would have been affected by a trans-Neptunian planet. This idea was later taken up by the flambouyant French astronomer Camille Flammarion (1842-1925).

The discovery of Pluto in 1930 did not satisfy everyone; it was considered too small to have caused the observed effects on Uranus and Neptune, and there were still a few left-over comets whose orbits had obviously been perturbed by a planet, but not by any of the known ones. Shortly after Pluto was discovered, William Henry Pickering predicted the existence of a tenth planet, larger than any other except Jupiter, with an orbital period of 656 years (compared with 248 for Pluto), at an average distance of 75.5 times the Earth's distance from the Sun (compared with 39.4 for Pluto). In 1950, Karl Schuette announced that eight comets were

equipped troops from the themes, a sign of the way that Emperor Romanus' anti-military predecessors had allowed the military establishment to decline. For example, before the battle, the German contingent of the army mutinied, and the rest of the army had to be called out to put the Germans down.

In May of 1071, Alp Arslan, camped before Aleppo, heard of Romanus' advance. Abandoning his plans to take Damascus, he withdrew, losing unreliable Iraqi auxilliaries and a vast number of horses. It looked like a rout.

This made Emperor Romanus overconfident. He decided that instead of trying to restore the old frontier defenses he could attack in force. He divided his force, sending Franks and Turks under a Norman commander to lay waste the area around Manzikert. Hearing of this move, Alp Arslan moved rapidly to intercept Romanus. He had with him only 4,000 of the mamluks, but he summoned the rest of this army from the heart of his own lands and recruited ten thousand more men from among the Kurds.

Romanus, learning of the Sultan's call to arms, sent 20,000 men to intercept him. Meanwhile the rest of the Byzantine army retook Manzikert after only a brief siege, as the Seljuk relief force began to arrive on the scene.

One of Alp Arslan's finest officers, Soundaq, defeated a large Byzantine foraging party. The Emperor dispatched the general Nikephorus Bryennius, who was initially repulsed until his reinforcements arrived. Soundaq was forced to withdraw, the Byzantines pursuing wildly, until the Turks counterattacked. The Byzantine generals were wounded, and one was captured.

By now Alp Arslan's army, though it still was smaller then the Byzantine force, had the advantge. The Sultan offered peace, which could not be accepted; Romanus knew he would not again be able to raise so large an army. He had to force the issue. The actual Battle of Manzikert took place on 18 August. In it, Andronikos Dukas, an enemy of Romanus, spread the rumor that the Emperor had been killed. The Byzantines fell into chaos and panicked; Dukas withdrew his reserve forces, which might have saved the day; and the army was cut to shreds. The Emperor himself, surrounded by his Varangians, was ultimately taken prisoner by a Seljuk slave-soldier.

The end had come to the myth of Byzantine military greatness.

Byzantine Armies, Ian Heath; London: Osprey Publishing, 1979

Herodotus on Cats

Herodotus tells of how cats are held sacred to Bubastis, the cat-headed Egyptian goddess, but another one of his more colorful tales — which may or may not be true (as is typical with Herodotus) — shows how Egyptians as a whole regarded them.

Egypt, Herodotus says, has in it many domestic animals. It would have more if it were not for some very strange feline customs. For example, when the females have kittens, they avoid the tomcats, who take revenge by seizing the kittens, killing them, and thus causing the females to go look for mates...and, therefore, more kittens.

Another story he tells about cats concerns burning buildings. When a house catches fire, he says, the most extraordinary thing happens. No one attempts to put out the fire because the house does not matter. What matters is the cats. Everyone available stands in a row about the burning house, trying to protect the cats who attempt to slip into it and die in the flames.

Among the Egyptians, when a cat dies a natural death in a household, everyone shaves his or her eyebrows. (When a dog dies, they shave their entire bodies, including the heads.) Cats, after their deaths, must be embalmed, placed in sacred receptacles, and taken to the shrines of Bubastis.

The Histories, Book II, Herodotus, Penguin, 1972

Trade Routes

Yavanas were what the people of India called men of the west. Generally they meant Greeks and Egyptians who dominated the trade between the Mediterranean and India, but they also might have referred to Rome, which conducted trade and diplomatic relations with India as well as China.

During the reign of Augustus, India sent several ambassadors to him. One came from Ceylon (modern Sri Lanka) to Claudius, and they kept coming until the reign of Constantine the Great.

Chinese records contain accounts of how people lived in Rome's eastern pro-

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known whose orbits were consistent with perturbations from such a planet. Schuette claimed that no other comets indicated perturbation by an unknown planet, which suggests that this tenth planet is also the last.

In 1972, J.L. Brady claimed to have found decisive evidence for the existence of this tenth planet, which he rather unoriginally called "Planet X." He restricted his calculations to the effects such a planet would have on Halley's comet, which is now approaching the sun and will pass by it in February, 1986. But Brady's predictions were quite different from Pickering's and Schuette's. His Planet X had an orbital period of 464 years, and a mean distance 59.9 times that of the Earth from the Sun. Furthermore, the orbit of Brady's Planet X was tilted at 60° to those of the other planets, and the planet revolved around the sun in a sense opposite to that of the other nine. And Planet X was supposed to be nearly as massive as Jupiter, though why an object that size had never been seen before was unexplained.

Nothing remotely like a tenth planet was seen in the region of the sky to which Brady's calculations pointed. Other astronomers calculated that a planet this size would have had effects on the motions of the other planets which simply were not observed. Moreover, ancient Chinese observations of Halley's comet showed that Brady had been using less precise figures for the ancient motions of that body. Finally, the motion of comets as they pass near the Sun is affected by other things than the gravitational attraction of the Sun and the planets. As the comet warms up, it emits jets of gas which change its motion — changes that Brady had apparently attributed to the agency of his Planet X.

Although Brady's calculations have not held up on examination, those of Schuette still suggest that a tenth planet is out there. Pickering, however, predicted its position to be in the direction of the southern constellation Indus, which is not conveniently located for examination by northern hemisphere observatories. Getting observation time on a southern hemisphere telescope, for such a systematic search as this, is very difficult. So far, the last word on Planet X is a set of 1973 calculations by D. Rawlins and M. Hammerton, based on its presumed effects on Neptune's motion. They make this planet much smaller than either Pickering or Brady had suggested, indicating that it is so faint that it will not be found easily — if at all.

Watchers of the Skies, Willy Ley; *Monsters in the Sky*, Paolo Maffei

Beware of the Plants

Several different varieties of plants have adapted to poor soil by evolving ways of supplementing their diets with insects. The Venus fly-trap (*Dionaea muscipula*) has hinged traps which can close on an unwary insect, and hold it as the plant digests it.

Compared to animals, plants have very slow reflexes. This makes the mechanism of the Venus fly-trap well worth study. Stephen Williams and Barbara Pickard have recently found that the trap closes because cells on the opposite sides of the trap's motor organs expand at different rates. This reaction is regulated by minute electrical signals which are triggered when an insect blunders into the trap.

The Venus fly-trap seems to have developed something of an analog to the nerve cells of animals. Animals move their muscles by such signals, triggered either by a reflex from a local stimulus or, in more advanced forms, directed also from a central controlling mechanism such as the brain. The independent development of such a structure in a plant was quite unexpected. That venerable hoax, the "man-eating tree of Madagascar," may come a little closer to reality; when humans begin to explore other planets it might not be too good an idea to stand too close to the larger vegetation until its capabilities can be assessed.

The name "Venus fly-trap" sounds mystifying if you have not ever seen one. But the name, a credit to Victorian euphemism, is quite justified by the appearance of the hinged traps. This plant is decidedly X-rated.

New Scientist, 8 January 1981

Stay Tuned for the Earthquake Forecast

In recent years, various parts of the

vinces, written by people who based their accounts on an ambassador's report from A.D. 97. In this report, the ambassador says that the Romans "are honest in their transactions and there are no double prices" — which came as a great surprise. One group of westerners must have come to China itself, for the same account reports that in A.D. 166 ("the ninth year of the Yen-hsi period, during the Emperor Huan-ti's reign") the King of Ta-ts'-in (Rome) An-tun (the Chinese form of Antoninus, Marcus Aurelius' family name) sent an embassy which offered them ivory, rhinoceros horn, and the tortoise shell, thus opening up trade.

After the Pax Augusta in Rome, as may be imagined, trade between East and West flourished. One of the most valuable commodities was pepper. It arrived in such amounts that the Emperor Vespasian sectioned off an area in the heart of Rome. This was called the *horrea piperaria*, or pepper sheds, and was for the exclusive use of spice merchants. And when, in 408, Alaric the Goth had to be bought off at the gates of Rome, part of the price was three thousand pounds of pepper. Emperor Tiberius in the First Century A.D. grumbled that Roman ladies' passions for foreign wares were transfering all their money to foreigners. Pliny the Elder worried that imports from Arabia, India, and China cost Rome 550,000,000 sesterces annually — a problem in balance-of-payments that is, indeed, nothing to sneeze at.

The Ancient Mariners, Lionel Casson, MacMillan, 1960

Metal in the New World

At least two thousand years before the *conquistadores* conquered Peru in 1532, metal was used in South America. As with the natives who lived by the North American Great Lakes, Peruvians first used metal in its native state, without smelting. In Peru, however, the metal was not copper but gold.

The earliest Peruvian metal artifacts were ornaments cut out of gold that had been beaten into flat sheets. Later Andean metal-workers, however, did not need to restrict themsleves to gold alone. The development of *huairas*, cylindrical furnaces made of terra-cotta with a series of openings along the sides, enabled them to smelt a variety of ores.

They charged the three-foot high *huairas* with ore and charcoal, then ignited it. At the base of the furnace burnt other fires which kept oxygen and carbon dioxide circulating as the ore heated. As the molten metal settled at the bottom of the furnace, it was drained off by a tap. In order to insure efficient ventilation, Andean smiths generally placed their furnaces on hillsides.

Though the ancient tradition of hammering objects into shape from plate gold continued up into the times of the Incas, metalsmiths in Meso-America also perfected the method of lost-wax casting. An artist would make an exact wax mold of the object he wished to cast. The wax came from the stingless bees of the rainforest and was mixed with gum or some other resin to give it resiliency. The model was decorated with pellets and threads for detail, and a wax funnel was added so that the metal could be poured into the wax mold.

Then the mold was coated with an emulsion of water and powdered charcoal to insure a smooth surface. The Aztecs called this charcoal water *teculatl*; modern goldsmiths use sodium or potassium silicate and graphite instead.

Once the model was coated, it was covered with a shell of moist clay and crushed charcoal and left to dry. Then the metal was poured in. After it solidified, the mold was broken. Where the wax had initially been was the gold artifact which was now freed of excess metal and given its final polish.

New World Archeology, W.H. Freeman and Company, 1974; "Early Metallurgy in the New World," by Dudley T. Easby, Jr.

A Knight and His Dog

When Tristan left his lover Isolde in England and sailed away to a place called Swales, he was very lonely. Duke Gilan of Swales, who was young, wealthy, and an admirer of good knights, noticed Tristan's loneliness and tried to assuage it. One day he sent for his little dog, Petitcrieu, which was supposed to have come from Avalon — that magic kingdom to which Arthur would one day be transported to await his future return. Servants spread a rich purple fabric down before Duke Gilan and Tristan and placed the tiny dog upon it. Its breast fur was composed of so many colors that from a distance it looked white, but its loins were green. One

world have been afflicted by several very destructive earthquakes. But, as the mechanisms of earthquakes have become better understood, methods of forecasting these shocks may be developed.

Brian Brody and William Spence of the US Geological Survey have gone out on a limb with the most detailed prediction yet. Though numerous astrologers and occultists have tried to get into this act, Brody and Spence are working from less dubious assumptions, which have led them to predict the biggest quake of the 20th Century will occur sometime around the 10th to the 15th of August in 1981. The afflicted region will be Peru and northern Chile, with the center near Lima. A second quake will follow the first by 37 days.

The region of Peru and Chile is particularly subject to earthquakes. A tectonic plate under the southeastern Pacific Ocean is presently being "recycled" back into the earth's mantle as the currents in the mantle are pushing it towards and under South America. Such situations, where an oceanic plate is being subducted under a continental plate, produce many earthquakes, and one seems to be forthcoming now.

Less scientific approaches are also being used. In January, the stock market analyst Joe Granville branched out and predicted that Los Angeles would be destroyed by an earthquake in May 1981. And a British author who prudently uses the pseudonym Richard A. Tilps predicts, in his *Judgement of Jupiter*, that in 1982 the planets will be aligned in a manner that will cause widespread earthquakes. His "authorities" include the 17th Century French occultists who wrote under the collective pseudonym Michael Nostradamus, but they also include articles by respectable scientists of our own time. What "Tilps" hadn't realized is that these articles were written as parodies, or for April Fool issues of popular scientific journals.

New Scientist, 1 and 29 January 1981; New York *Post*, 8 January 1981

Synchronize Your Hormones!

There are persistent rumors that if a number of adult women live in the same household for several months, their menstrual cycles will come into synchronization. A research team at Sonoma State Hospital now has evidence that this actually happens, and seems to have discovered the means by which the synchronization is brought about. Some women are apparently capable of triggering this process by their sweat.

The researchers, Michael Russell, Genevieve Switz, and Kate Thompson, worked for five months with 17 volunteers. One woman, who had allegedly previously triggered this phenomenon, was instructed to use no underarm deodorant, or to even wash there. Her sweat was absorbed in pads which were then saturated with alcohol. The other 16, none of whom was using an oral contraceptive or was living with another woman, each received a drop a day of alcohol on the upper lip; for eight of the subjects the alcohol was laden with sweat, while the other eight, the control group, received the alcohol only. None of the subjects knew to which group she belonged.

At the end of five months, all but one of the women who received the sweat were beginning their menstrual periods within one day of the sweat donor. The average for them was 3.4 days, down from an initial 9.3 days. For the control group, the time interval actually rose, from 8.0 to 9.2 days.

This seems to be the first attempt to investigate this phenomenon. The hormones or pheronomes involved still have to be identified, and there is certainly room for speculation as to what evolutionary advantage there was in this synchronization.

New Scientist, 8 January 1981

Science City

Many of the older science fiction stories were set in a futuristic "science city," a metropolis devoted entirely to scientific research and populated by its research workers and technicians. Indonesia, however, is beginning to turn this dream into a reality, and is building such a city south of Serpong, a suburb of Jakarta, the country's capital. It will be a National Center for Science, Research and Technology, and will provide

side was red, the other saffron, and the belly was azure. Petitcrieu's back, however, seemed to be made of no color at all because so many blues, greens, yellows, reds, and purples were intermixed in its fur.

The wonderful dog wore a chain of gold upon which hung a bell that rang so clearly and sweetly that Tristan forgot all his sorrows. He put out his hand and the dog, which neither ate nor drank, permitted him to caress it; Petitcrieu never barked or bit. But when Gilan's servants took the dog away, Tristan was as sad as before.

He knew that Gilan would never part with the dog unless Tristan performed some marvel. Consequently, he freed Swales from the terrifying raids of the giant Urgan the Vile and claimed Petitcrieu as his only reward. Gilan would have preferred, he said, to give Tristan half his lands and his beautiful sister in marriage.

Tristan sent the magic dog to Isolde who marvelled at it greatly and had made for it a rich golden kennel. She never let it out of her sight. She cherished the little dog as a reminder of Tristan, but the bell around his neck brought her no solace. Saying that she could not be happy when she was miserable, she broke it off the collar and it never rang sweetly again.

Tristan, by Gottfried von Strassberg, Penguin, 1970

The Hippodrome

Modelled on Rome's Circus Maximus, the Hippodrome of Constantinople lay almost in the shadow of the dome of St. Sophia and very near the imperial palace. The Hippodrome was 1,300 feet long and originally designed for chariot races, with a great central *spina* around which the horses ran. However, it also witnessed mock hunts, acrobatics, mystery plays, and during the time of the Crusades, western-style jousts.

The Emperor, sitting in the royal box, presided above the arena as many Roman emperors had done in the Circus Maximus. Like the Roman circuses, the circus of Constantinople had political overtones. During triumphal entries, the Emperor might free captives in the Hippodrome, or people might take advantage of the Emperor's presence to protest oppressive taxes; they might also witness the execution of public officers who had been discovered to be corrupt. The Hippodrome was sometimes taken over by rioters. During the Nika rebellions of 532, the army trapped and killed 30,000 citizens who had almost succeeded in ousting the co-rulers Justinian and Theodora. In 1185, the Emperor Andronicus I was slowly executed on the sands of the arena.

Byzantium, by Philip Sherrard, Time-Life Books, 1966

King Harold

On 1 October 1066, Harold Godwineson left York after defeating Harald Hardrada and his Norwegians and led his Housecarls (household guard) on a forced march from York to London. The reason for this extraordinarily swift journey so shortly after the battle of Stamford Bridge was very simple — William, Duke of Normandy, had landed and was claiming the English throne. Although King Harold had initially supported this claim, he had withdrawn it, claiming that his support in the form of an oath had been gained under false pretenses.

So Harold managed the trip in four days, arriving in London by 5 October. The rest of his troops followed him more slowly, probably joining their king by 9 or 10 October. For five days after Harold reached London, he prepared to deal with the Normans who were camped on the Hastings-Pevensey peninsula. His plan was to block William's army in land Harold knew well, land that had, in fact, been part of his original earldom.

The battlefront he would have to guard was no more than a thousand yards in length. His plan was to wait until the English winter forced William to turn around and sail home. However, Harold underestimated two things: that William could take the military offensive as quickly as he did; and that he could bring a force, especially a force of cavalry, across the Channel that would be of sufficient strength to oppose him.

On 13 October, Harold "dug in" on Senlac ridge. The next day he was dead with an arrow through his eye, and England had a new king.

The Enigma of Hastings, Edwin Tetlow, St. Martin's, 1974

one center for the various projects now scattered around the far-flung islands that make up Indonesia. The science city will house the National Standards Laboratory, the National Data Center, and research facilities in atomic energy, geology, statistics, and even aerospace. Indonesia's second nuclear reactor will be located there, as will a permanent exhibition on the history of science and technology. The science city is expected to be ready by 1985.

New Scientist, 1 January 1981

"Today I Am a Man!"

Almost every culture in the world has a "manhood" ritual, which marks a boy's achievement of adult status. How far back this goes was revealed by Professor Alberto Blanc in 1957, with the discovery of a cave in northern Italy. The local people called the place Basua, or Witch Cave. Whether or not this name implies in distorted form an inherited knowledge of its ritual use is arguable, but the ritual itself is unmistakable. If this guess is correct, then the local legend grew on very little material evidence, because the cave was closed by a landslide many thousands of years ago, and only uncovered recently.

The clay floor of the cave shows numerous prints of naked feet, and the remains of torches used for illumination, but no tools and no garbage. This would indicate that the cave was used for ritual, not residence. The foot shapes differ from those of all living humans but one — the native inhabitants of the southwest Pacific island of New Caledonia. Anthropologists have long known that the foot skeleton of the New Caledonians resemble that of Neanderthalers. Apparently there was some interbreeding between the two radically different stocks of *Homo sapiens*, or maybe the same foot shape developed separately.

The Neanderthalers use of the cave was indicated by the remains of small clay balls, obviously scooped from the cave floor and hurled at a target at the wall. The target, to judge from a pair of deeply indented footprints at the wall, was a young Neanderthaler who stood there for some time. Some of the clay balls had struck a wall projection that looks a little like an animal; these were carefully scraped off.

Professor Blanc's analysis of this evidence suggests that, to show his initiation into manhood, a youth was taken into a cave where there was an image of a totem animal, and subjected to a bombardment of clay pellets by his elders. Presumably he would fail the test by flinching, since a man who cannot stand a barrage of clay pellets would not be a good companion in a hunting party when a wild bull or rhino charged.

This presumption indicates that the Neanderthalers had fairly complex rituals and a social life in which they were embedded. This qualifies them as being fully human.

The Ice Age, Bjorn Kurten, 1972

The Reception Committee

For about 22 centuries, astronomers have marked the regular return of Halley's comet, which passes near the sun every 75.8 years. Halley was the first to realize it was a periodic comet in 1682; he predicted that it would return in 1758, which it did, making its first appearance just one week before the end of that year. It has since returned in 1835 and 1910, and will make its closest approach to the sun next in February, 1986.

This will be the occasion for a project planned by the first international agency to develop a space program. The European Space Agency will send Spacecraft Giotto to intercept Halley's comet during its 1986 passage. No landing on the comet is planned, but the spacecraft will measure the concentration of gas and dust around the head of the comet, and try to get photographs of the nucleus. These photographs are expected to verify the best present ideas about the composition of a comet's nucleus, the so-called "dirty snowbank" theory of F.L. Whipple. The nucleus is probably composed of ice and other frozen gases, plus a small amount of dust and rock. As the comet approaches the sun, the increasing temperature causes the gases to melt, to drift away from the nucleus as a tail, and to glow.

This will be the first venture of the European Space Agency beyond the immediate vicinity of the earth.

New Scientist, 8 January 1981

FICTION

ILLUSTRATION BY PETER de SEVE

The Embracing

by David J. Schow

After Tillyard and Althea were injected with the drug, they were released into the labyrinth and no one heard their names again.

"I love you — oh *please*. I can sense you're here with me. Please be with me. Make love to me. Now, quickly, love me."

"Yes," Tillyard managed slowly. His voice, clogged and ragged with disuse, served him reluctantly — but then, the speech part was important. His nose prickled; his eyes, though sightless, darted about. "Yes. I want to make love to you so badly. It's been so long; I've been so alone." His voice cracked into a sob. "Touch me. Take me." He stretched his left hand out into the darkness. "Love me."

At the second of contact, Tillyard jacked his right arm savagely around, putting his weight and the piston force of his bicep behind the strike. The blunt, bullet-shaped stone in his fist impacted where he knew a skull to be; the wet crunch was amplified by the cathedral acoustics of the cavern. The thing that had briefly touched his arm had time for a single liquid squeal before its reflexes were severed. Tillyard knew how to time the swing, how to place the blow to kill instantly and properly.

The thing collapsed to the stone floor, its blood and brains rivuleting away into moist crannies of rock. Tillyard sensed where the corpse had fallen and straddled it, his legs registering the tingle of residual body heat. He cast quickly around and, assured that he was alone (in this chamber of the labyrinth, at least, and for the time being), he knelt and used the stone to puncture the chest of the creature on the floor. Its heart was warm and slick. Tillyard slipped the heart into his bloodbag; he could eat it later. The cavern here was too open and dangerous, and he had to get to close walls and narrow tunnels.

All that was in his mind was her face. The last thing he had ever seen was her face.

A pair of burly Stockboys had whipsawed her against the courtroom wall to restrain her. She had always been more visceral in her reactions, while Tillyard — ever the artist, therefore removed from the fantasy existence most people thought of as the real world — had been defeated by his limitless capacity for rationalizing even the outrageous. He came to his feet but could not move; his very senses were stunned by the impact of the verdict. Across the room — they had not been permitted a single moment together since their apprehension — Althea was up and moving before Tillyard reacted.

On reflection, Tillyard found woe even in his loving admiration for her more basic expression of humanity. She had known instantly the verdict would doom them both, while Tillyard's mind had to eliminate loopholes first, convincing itself. He stood frozen, thinking. She determined immediately, so fast that perhaps it was on a subliminal level of instinct or chemistry, that since they were doomed, the removal of a single Adjudicator from the world could not damn them any more seriously. She had leapt from her berth in fury, twisting around the guards dogging her, and went for him on the dais.

Of course, the Stockboys intercepted her — that's what they were there for. She thrashed as they restrained her and the Adjudicator smiled tolerantly.

Sentence passed, disposition was instantaneous. The medico of the court arranged his leather cases on one of the broad tables. He took great care in the inspection of his ampules, holding them against the light and nodding professorily at each while clucking absently to himself. Finally: "Which first, my Lord?"

The Adjudicator, nonplussed by Althea's aborted attack, cocked an eyebrow and said, "Him first. Force her to watch."

The last thing Tillyard had ever seen was her face. The high, round cheekbones that enhanced the value of her smile. The conscientiously formed lips, cool and soft. The expressive contrail brows arching above eyes a dark liquid brown, so deep they seemed black. Her features, the familiar topography of her face, were stressed now into anger, into sorrow, into heartbroken loss and utter frustration. But the spirit still burned there, in her eyes, even though it was the end.

They slammed her against the wall and vinyl gloves caught her throat in a chokehold, forcing her to watch as per command. To watch Tillyard.

He was efficiently immobilized by another Stockboy. The burly mutant held him fast as he struggled — the cords jumping redly out from his neck. Done now with his frittering and spot-checking, the medico of the court approached. Tillyard noted clinically that the medico had some sort of spinal defect that forced him to walk with a crablike shuffle, body averted sideways, and that his left hand seemed partially paralyzed. When not in use, it drew up against his chest, like the claw on a child's digging toy.

Across the room she was now silent, fighting to stop the tears that came involuntarily at first and then coursed down her face. Neither had done anything of which to be ashamed; that no one present in the court cared either way was more reason for emotion now. Of all the truths that might have punctuated this moment, of all the declarations Tillyard wanted to hear but did not require of her, nothing was heard. She had decided not to give the bastards any more. Tillyard felt a pang and tears generated in his own eyes.

He was watching her, cataloging the beauties of her face as he was jabbed. He felt the steel penetrate the crook of his arm; his muscles were tight against the hold of the Stockboy. The demon brew was, as he expected, hot and burning. He imagined his flesh scorching and blackening with its passage. Gritting his teeth, he did not take his eyes off her. Physically denied, they locked onto each other with lines of sight and caring. The chemicals mingled darkly with his blood and made the circuit of his heart once, twice, and in the very distant background Tillyard could hear the natter of the court officials but ignored it, with tears cascading freely down his face. He blinked them away to focus on Althea, and for that moment they were united. Neither said anything about love; it was not necessary.

And then the gray blotches blossomed on Tillyard's corneas. They were like patches of ice, with crystalline borders that expanded and began to bleed into each other, linking up like fibrous mesh. Stupidly, Tillyard attempted to peer around the patches slowly scabbing over his eyes, even as he felt his eyes die. He could still see Althea, but now she too faded to gray like a bad video image, becoming blurry and indistinct. At last she was obliterated from view. There was the palpable sensation of something thin and nonporous *cleaving* to Tillyard's eyes, like decals, but that was ridiculous — it was the drug. And the drug was permanent.

And the picture of Althea he held in his mind was not the one he had just logged. Rather, he thought of how she looked just after they had made love — her eyes dark and sparkling, the relaxed, contented attitude of her face, the neat row of upper teeth visible as she purred in a deliciously low register. He could feel her body manufacture the sound, as he felt all the important and private sounds she made....

The muscles in Tillyard's knees suddenly went to rubber and he crashed face-first onto the courtroom floor. He fell down the funnelling rabbit-hole of his own mind, swimming in alien colors, tumbling, his feet striking his face, into unconsciousness.

"Now her," said the Adjudicator, and Tillyard heard it before he passed out. Abruptly it seemed terribly important to show Althea they could not best him with their drug, to say *i love you* against its riptide of disorientation, and he tried to force the words out, past his inoperative vocal chords and numb lips. He marshalled his draining strength and *pushed* — she had to hear it as he was going down; she had to. Now it was important. He *pushed* and felt the words leave his body. His mind floated for a second, giddy with victory...and having succeeded, he let oblivion suck him down and away.

Althea watched Tillyard collapse in a heap, as though all the bones had been withdrawn from his body without ceremony. He crumpled without a noise, and for a second even the Stockboys holding her were stunned by the grotesque sight.

She wrested loose and managed to reach the huge courtroom doors before they battered her down with their truncheons. Blood flowed copiously from a split and swelling eyebrow, and the medico sprinkled some powder into the wound before jamming her with the needle.

The officials of the court had no way of perceiving the massive hallucinations that accompanied the prime function of the drug, the removal of sight. Almost like some sort of bizarre compensation, the show it provided was spectacular.

When she was gone, the Stockboys, en masse, looked expectantly up to the bench, like greyhounds awaiting a table scrap. The Adjudicator pondered a moment, then said, "You may run her through the Stockboy barracks once or twice before taking her to the labyrinth." The mutants looked to each other and grinned.

Three hundred and five — no, six.

In a place where there was no day, no night, no time and no change whatsoever, Tillyard had a number. Three hundred and six. How many he had killed. Killed and eaten.

Crouched like a neanderthal man within a tight, secure niche of rock, Tillyard wolfed down the scraps from his bloodbag, the leftovers from the creature he had battered to death almost an hour before. A subjective hour, purely — in the labyrinth there was no time.

It had been long ago, an eternity ago he had come to consciousness sprawled on the rock floor. Water, from somewhere above, patted onto his forehead in tortuous syncopation *bap bap bap*. The water smelled like chalk. He coughed and the convulsion sent shockwaves slamming through his brain; the afterburn of the drug was agonizing — so agonizing that at first he did not realize something was feeding on his left arm. Something with evil little rows of teeth had torn the flesh and was busily lapping up Tillyard's blood with a cat-like sandpaper tongue.

Tillyard did not *need* to see it. Hearing it eat was too much.

"Aahhh!" He lashed blindly out in the dark and heard the thing scuttle angrily back. *Thought you were dead, mate, sorry....* It sounded too small to be a part of the genetic trash periodically flushed away into the labyrinth, and so possibly was a denizen of the harsh place, a native, living in the tunnels before there were Adjudicators and medicos and mutant Stockboys.

Angry with himself now, Tillyard could only think that the first thing he had done in the labyrinth was utter a primitive noise, take a violent action. The essence of irony — wielded in terms of punishment and sculpted by the expert mind of an Adjudicator.

"Since your favorite term for us in your rabble-rousing is 'barbarian,' and you will not desist, you will become as one with us, a savage, that you may perceive the difference. You wrongly believe us cruel and primitive; this causes unrest and dissatisfaction. We will show you what cruel and primitive are. We will show you what it is to be a barbarian."

Tillyard had a following in the arts, and that was both dangerous and frustrating. Dangerous because it gave him an intelligent audience; frustrating because it was an audience that could not be counter-propagandized — his followers would never buy a sudden conversion of viewpoint. The judgment became necessary because it was a personal coup for the Adjudicator; he had decided to make Tillyard a myth-object lesson. They would remember what happened to Tillyard.

And they would take a cue from what would also happen to his overly vocal companion, Althea. Yes. They would learn that association was as evil as provocation. The pair of dissenters was blinded in the prescribed fashion. They were consigned to the labyrinth according to law, to survive, barbarically, forever. There was no time in the labyrinth.

Tillyard licked the blood off his fingers. he had lost the last two of his right hand eight kills ago — number Two Hundred and Ninety-Eight.

For three hundred and six kills he had been searching for Althea, yet in all that time had never once spoken her name, nor had he spoken his own — two shreds of armor that

protected him from the things in the labyrinth and their devilish form of low-grade telempathy. They were not creatures of specifics, yet, for the total darkness of the labyrinth, and using some baffling furrow of their mutant brains, they were able to detect Tillyard's emanations. The love they registered for the unnamed female blanked out the more crucial message — that Tillyard was a carnivore, intelligent, cunning, physically stronger. The creatures absorbed the dominant emotion and assumed the persona of the female as bait. Tillyard reasoned that names meant nothing. He exploited his advantage ruthlessly; her face was in his mind as he bludgeoned and killed. He thought only of her laughter as the ichorous blood of the creatures crept past his elbows, drenching him. And he remembered her name, hoping that somewhere in the labyrinth she had managed to be as canny.

He bent to the trickle near his head and sniffed. The flow was clear; he drank first and then rinsed the dry and flaking blood from his arms.

There was a disturbance. Mentally he logged a heavy movement in the chamber below him and he froze like a pup on scent, listening. He recognized the wet slap-and-drag motions of one of the huge creatures he had indexed as Shufflers. They were dense and massy, almost impossible to kill with their reptilian plating and tusklike teeth. Their leaden movements were misleading — when angered or frenzied with hunger, they reared up on their hind legs, using teeth and

claws to shred. They fixed on motion to attack — theirs were keen, bestial senses rather than human capacities enhanced by mutation — and so Tillyard did not breathe, did not twitch.

Rather than actually *feeling* the impact of the blow, Tillyard heard the fat paw whistle through the air prior to the sudden strike that numbed his entire body to further sensation. The pain had no time to localize. Tillyard had been hit; he knew he was falling from his hiding place, but was aware of nothing except the white veins of lightning etched across his mind's eye, and the imperative to escape, to avoid contact....

TWISTING AND HITTING the rock floor of the cavern caused the roar of blood in his ears to subside. He heard the phlegmatic respiration of the beast as it advanced on him, could smell the oily reptillian stink of it, could feel its bulk cutting across the thick atmosphere of the room. Agony lanced up his legs — landing on his knees, he had managed to break something and could only flop forward onto his face. He groped for the bone knife sheathed next to his bloodbag and found it had clattered away in the fall. One of the Shuffler's taloned feet slapped the damp stone inches away from his face.

The creature gathered Tillyard up into its mitt-like forepaws, rearing back on its hind legs and sweeping him up into the air. Tillyard braced his arms against the thing's hot snout, trying to push away in vain, for next would come the scrabble of paws that would open his guts up and then the slow leaking away of his life into the darkness.

A foreign object blasting through with enormous force almost ripped Tillyard's arm away — it seemed to be a pole or crude spear about four inches in diameter. By the sound, it had homed in on the Shuffler's throat and was imbedded well, but the creature did nothing to indicate the injury was anything more than an annoyance. It clutched its dinner, Tillyard, firmly. There was movement elsewhere in the room, but Tillyard was incapable of discrimination.

Abruptly the Shuffler lurched sharply forward, surprised or pushed from behind by its new attacker. It shrieked, hot saliva splattering Tillyard. He felt the sickening vertigo of its fall and realized he was sandwiched between the massive beast and the floor. The air rushed. Tillyard gave vent to a shriek of his own, abrading his ragged vocal equipment with his own absolute terror. It reverberated in the cavern but he never heard it.

His shoulderblades crunched onto the floor and the Shuffler was on top of him. Its teeth sank into his flesh, and Tillyard mercifully blacked out.

The place to which he wafted dreamily down was pleasant; his pain was filtered out as he descended. He saw Althea's face, the perfect, timeless picture, again. He saw his own face as well, as he remembered it. Of course, he had no inkling of what his face might look like *now*, but it was a physiognomy yet unmarred by the changes obvious to his sense of touch, a face without the scrub of beard, or the scars, or the crusty pits of his atrophied eyes. A needle, a small

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Film & Television

RAIDERS OF THE LOST ARK

Executive Producer: George Lucas
Producer: Frank Marshall
Director: Steven Spielberg
Cinematographer: Douglas Slocombe
Effects Director: Richard Edlund
Music: John Williams

Cast

Harrison Ford	Indiana Jones
Karen Allen	Marion Ravenwood

Steven Spielberg and George Lucas have been good friends for over a decade. Between them they are responsible for four of the world's 10 top grossing films. Four years ago, the pair decided to work together on a 1930's style cliffhanger. The result is an action-packed adventure entitled *Raiders of the Lost Ark*, starring Harrison Ford and Karen Allen.

Lucas put the film together for personal reasons; "I'm really doing it so I can enjoy it; I just want to see this picture." The idea was an old one for Lucas. "I wanted to make an action/adventure kind of serial film. The idea came to me about the same time I had the idea for *Star Wars*. I got more interested in *Star Wars*, so I put *Raiders* on the shelf, figuring I'd get back to it someday."

Production finally began in 1980, with the film being released this summer. For those who love those "good-clean-fun" type of pictures, *Raiders* is definitely their movie.

Lucas chose to set his story in 1936 in order to take advantage of some intriguing facts. Adolf Hitler, an avid student of religious doctrines and artifacts, believed in astrology and the power of the occult. Before and during the war, he commissioned professional investigations into all manner of religio-occultist claims.

Using these facts as a jumping-off point, Lucas weaves his tale, beginning it in Egypt. American Intelligence establishes that the Nazis may have found the lost city of Tanis. Apparently their mission is to find the Ark of the Covenant, lost since 980 B.C. The Old Testament states that the Ark will be rediscovered at the time of the coming of the True Messiah, a designation Hitler desperately craves for himself.

The Nazis, however, lack the all-important headpiece to the staff of Ra which is needed to determine the Ark's precise location. It is in the possession of Professor Abner Ravenwood, an archaeologist who had last been seen near Nepal. At this point, the American government recruits Indiana Jones (Harrison Ford) to find Ravenwood, and to recover the headpiece and the Ark before the Nazis do.

The film begins to move into high gear as Jones bounces from peril to peril, trying to beat the Nazis in the race to the Ark. The dangers faced by the archaeologist/grave robber include assundry falling boulders, rooms filled with spiders or snakes, explosions, submarines, stone doors with steel teeth, poisoned darts, and numerous other Fu-Manchian devices.

The film is a devoid of profound messages as was *Star Wars*. It is basically "good versus evil" with little else except action that is fast paced and exciting. The sets are exotic, the special effects are as expected — many, varied and first class. The leading lady (Karen Allen) is beautiful; the music by John Williams is spectacular, and the sum of the parts is one thoroughly enjoyable summer picture for just about everyone.

Christopher John

SUPERMAN II

Executive Producer: Ilya Salkind
Producer: Pierre Spengler
Director: Richard Lester
Screenplay: Mario Puzo, David Newman & Leslie Newman
Story: Mario Puzo

Cast

Christopher Reeve	Superman/Clark Kent
Gene Hackman	Lex Luthor
Margot Kidder	Lois Lane
Jackie Cooper	Perry White
Ned Beatty	Otis
Valerie Perrine	Eve Teschmacher
Sarah Douglas	Ursa
Jack O'Halloran	Non
Terence Stamp	General Zod
Susannah York	Lara
E.G. Marshall	The President
Marc McClure	Jimmy Olsen

Every summer of late, movie goers seem to take part in an existential drama — *Waiting for the Sequel*. As they wait, they always debate the same question: *"Will it be better than the first?"* The controversy over the question grows in direct proportion to the first movie's popularity. Last year, everyone waited for *The Empire Strikes Back*, wondering how George Lucas could ever top *Star Wars*. Most of the potential audience was convinced he couldn't. When *Empire* turned out even better than *Star Wars*, it gave us high hopes for future fantasy sequels...like *Superman II*.

Unfortunately, these great expectations are not to be met this time around. *Superman II* has very little to recommend it over its predecessor. It is a good film, well worth the watching, but it is not touched with the same kind of greatness as was *Superman*.

The film open with a recounting of the Kryptonian villains being sentenced to the Phantom Zone; then follows another set of fantastic credits. While being visually more stunning than the original *Superman* credits, they also manage to recapture the first film through a number of clips which retell the man of steel's story, preparing us for the continuation. General Zod, Ursa, and Non escape the ethereal Phantom Zone, while Lex Luthor makes his escape from his earthly prison, leaving the clumsy Otis behind. With these events covered, the story is ready to unfold.

On the surface, things seem to be in excellent working order. The first film has been recounted; Superman's greatest foe to date is loose and looking for his blood; a trio of super-powered menaces, all three ruthless, sadistic killers, are on their way to earth. On top of this, the romance between Lois and Clark/Superman continues to grow. Having all these elements, *Superman II* should be a blockbuster, but it is not. Sadly, the unfavorable comparisons to *Empire* continue.

In *Empire*, John Williams returned to re-score his original themes from *Star Wars*, while adding a number of new pieces that augmented the majesty and novelty of the film. Like so many others of the original artists, Williams did not return to *Superman II* but left the scoring in the hands of composer Ken Thorne. Thorne does a highly competent job of restyling William's original music; it *is* a good score. The problem, however, is that it is only a rehashing of the first; there is nothing boldly, or strikingly new in it — and that is the problem with all of *Superman II*. There is nothing original to the sequel, nothing new enough to get really excited over. The audience notices the holes more than the novelty.

For one thing, Jor-El (Marlon Brando) is sorely missed. Although Susannah York does a fine job of filling in the spots which would have been Brando's, she is obviously pinch-hitting; the scenes are evidently meant for Brando. The tension between the "Father and the Son," the finely done God and Christ imagery of the first film, is gone. The lack of Geoffrey Unsworth's photography is also apparent (even though he is credited on the film, very little of the footage shot before his death remains). Finally, Richard Lester's directing style conflicts too sharply with that of Richard Donner's to allow an even flow between the two films.

Throughout Donner's work, there is a conscious attempt to keep the comedy to a minimum. He is a serious director. When directing *Superman* Donner took the essentially simplistic material of a comic book, a story literally *everyone* in the world already knew, and gave it a surprising amount of depth and power.

Lester, however, is another matter. He, in reverse, has always had the ability to lighten a serious subject by showing us the humor inherent in it. Here though, where a sharp balance between the comic book and the film should have been maintained, Lester opted for the broader antics and sometimes silliness of the comics, reducing *Superman II* to the level everyone feared the first film would be.

Unfortunately, in almost all ways, the sequel is not up to snuff. Although everyone's acting is still right on the mark, the editing, directing, and the special effects are not. *Superman II*, though highly appealing, is not what it could have been. By offering us little difference, especially where it

matters, *Superman II* falls into the category of sequels containing such films as *Jaws II* — highly absorbing and entertaining, yet better films only if you never saw the original.

Christopher John

EXCALIBUR

Executive Producers: Edgar F. Gross & Robert A. Eisenstein
Producer & Director: John Boorman
Screenplay: Rospo Pallenberg & John Boorman

Cast

Nigel Terry	King Arthur
Helen Mirren	Morgana
Nicholas Clay	Lancelot
Cherie Lunghi	Guenevere
Paul Geoffrey	Perceval
Nicol Williamson	Merlin
Robert Addie	Mordred

John Boorman has been entranced with the legend of King Arthur and his knights of the round table throughout his entire filmmaking carreer. Bits and pieces of it can be found in much of his BBC work, and throughout most of his films. He wanted to tell the story of what he calls "...our most endearing legend" for over a decade, but his screenplay and his arguments were ignored by most parties. Finally, after *Star Wars* proved that indeed there was a market for fantasy, he suddenly found that backing for *Excalibur* was easily obtainable. Taking several years to finish, heavy in mood and imagery, stunning in its execution, *Excalibur* is the finest sword and sorcery film ever made — a brilliant tribute to Camelot and her once and future king.

We all know the story. Arthur frees the sword from the stone to become king. He weds Guenevere, only to have her cuckold him with his best friend Lancelot. Shortly thereafter, internal strife nearly ruins the round table. To hold it together, Arthur sends his knights on a quest for the Holy Grail. Perceval discovers it in time to remind Arthur of what the king had forgotten, that he and the land are one. Armed with this knowledge, and the power which comes from it, he rides into final battle against his bastard son, Mordred. They slay each other, and Excalibur is returned to the Lady of the Lake to be held for a future king who may be worthy of it.

Boorman is basically faithful to the legend, taking his interpretation from Thomas Malory's *Le Morte D'Arthur*. Telling his story through Merlin's eyes, Boorman paints a picture of an England still in the hands of small feudal kings. Magic and Christianity struggle against one another, Merlin being presented as the last agent of the dying gods. Part magician, part conman, he uses trickery and true magic to meddle in men's affairs and to toy with history. Nicol Williamson portrays the ancient mage with great versatility. At times he is charged with lightning, a terror to the minds of men; at other times he seems "thin and threadbare," filled with the knowledge that the end is near for him and his kind.

This, of course, is Boorman's point. The film is an allegory for our times, speaking of modern man's loss of magic and, more tragically, his loss of unity both with nature and with the universe which surrounds him. The film works at multiple levels at once, each of them pointing back to Boorman's main theme.

Each facet of the production adds to *Excalibur's* excellence. Borrowing some of its sound track from the music of the Middle Ages, Trevor Jones has crafted a moving combination of moods into his composition which adds greatly to Boorman's vision. Peter MacDonald's photography is superb in most places. (The film has a problem in that certain shots are intercut with badly washed segments of film, which can be jarring during their brief flashes on the screen. Luckily, they are few and far between.)

The film's flaws are too minor to bother with, however. Boorman and his people have designed an intricate production which dazzles the audience more with each showing. Boorman's England is a verdant blaze of ferns and vines, a rich, opulent nature which blesses Arthur and his knights until they forget their connection to it. Subtly, as Arthur forgets his oneness with the land, it becomes brown and grey, dying in mud and dead grass, though finally to be reborn with Arthur by the end of the picture.

There is more than just scenery for the eye, however. Boorman's action sequences are sharp, savage and unpredictable. They are not the courtly duels of Errol Flynn and Basil Rathbone; these combatants are a grunting, bashing, bleeding lot, filled with a violence and a hating tension seldom found on the screen these days.

For the most part, the performances Boorman has drawn from his cast are excellent. Nicol Williamson's Merlin is the high point of the film. His interpretation of the character is as open to debate as is the film itself. Filled with nuances, his portrayal of Merlin is one which, if taken in parts, seems contradictory, but when taken as a whole, offers an amazing display of a writer's acumen and an actor's genuis.

Also excellent are Nigel Terry as King Arthur, and Helen Mirren as Morgana Le Fey. As Lucas did with *Star Wars*, Boorman has also populated his fantasy land with, for the most part, unknown faces, augmenting the film's realism.

Excalibur is a shockingly large film, an incredibly intricate and fascinating piece of cinema. It is a fine prologue for the spate of fantasy films waiting in the wings for release this year.

Christopher John

KNIGHTRIDERS

Executive Producer: Salah M. Hassanein
Producer: Richard P. Rubinstein
Director: George A. Romero
Screenplay: George A. Romero

Cast

Ed Harris	Billy
Gary Lahti	Alan
Tom Savini	Morgan
Amy Ingersoll	Linet
Patricia Tallman	Julie
Christine Forrest	Angie

The question which comes to my mind is: if *Excalibur* is the second best picture of this year, what is the first? Beyond any doubt, the best picture so far this year is George Romero's *Knightriders*.

Knightriders is the story of a troupe of performers who travel with a Renaissance Fair, a movable pageant extolling the Middle Ages. Their caravan pulls into small American towns; local people stand and stare as they parade down Main Street in full medieval garb, selling tickets to their weekend event. After the parade they set up camp a few miles out of town where the people will come to feast on Saturday afternoon. The troupe sells food and drink, and artisans sell leather goods and ceramic pots. Musicians play, clowns gambol, tumblers tumble, and the crowd watches with disdain or amusement, waiting for the main event, the tournament.

The tournament is a full medievel joust, combatants in full armor, wielding axes, battleaxes, maces and broadswords, attacking each other not on horseback, but on motorcycles. It is the smell of mechanical death which draws people to the weekend events, the same ploy the film hopes to use to draw people into the theaters.

Over the two years the troupe has been together, it has grown to a size where it is beginning to have financial troubles (too little money split amongst too many people), and also where it has begun to receive considerable attention from the press and television. Pressure grows within the group as their king, Sir William (Ed Harris), tries to keep the publicity down, while other members of the troupe encourage it. Sir William wishes to follow his own code, keeping the troupe pure. No drugs are allowed in their camp. Everything is kept clean and above board so that no trouble can break out between the troupe and the locals wherever they are.

Morgan (Tom Savini), Sir William's strongest knight, wants the recognition, the glory, and the money which publicity will bring. Morgan also seeks Sir William's crown. Thus, the group splinters, some wishing to remain true to Sir William's dream, the others following Morgan's ambitions.

Knightriders is a lavish celebration of honesty and truth, a rediscovery of middle-America's values as reflected through the codes of the knights of the round table. Romero's knights are attacked by everything which is evil in our society: payola cops, instant fame, drugs, and insensitivity. The allegory continues as the devil lays more temptations out before them; cheap sex, easy money, glittering costumes, fame and power can all be theirs. All they have to do is

turn their backs on their code and their dream. Some do, some don't.

The film could actually stop at this conclusion, but it does not. Romero follows those knights who leave, showing their treks through the devil's rewards as their frustration and bitterness grow. In the meantime, Sir William and those knights loyal to him wait for their lost brothers to return.

The finale of the picture is not the return of the prodigal knights, nor is it the ultimate contest between Sir William's followers and Morgan's for the crown. After William loses the crown, the film then follows his exploits until all the loose ends are tied up.

Knightriders is more than the film promoted in the commercials — the violence is not the focus of the film. As in Romero's last film, *Dawn of the Dead*, violence comes in spurts. The picture's most intense scenes are made more effective by the lack of continued excess. What is important in *Knightriders* is the message.

As in *Excalibur* Romero points up in *Knightriders* the problems with today's society, doing so much more directly, of course, by examining them in the actual present. The emptiness of fame, the hollow lure of "swinger" relationships, the loss of love from a culture, the dehumanizaion of the "know-it-all" television society, and, of course, man's loss of identity and lost place in nature are Romero's themes. Hitting strongly, pulling no punches, he covers these and other ills, never dwelling too long on any one, never even making value judgments. The audience is left alone to make its own choice. Many of the evils Romero puts on the screen are so familiar that it is hard to recognize them as such, which is, of course, Romero's point. If you can't tell something is bad while you watch it happen to a character up on the silver screen, how are you supposed to recognize it in real life when someone waves the apple under your nose?

Romero delights in spotlighting the trials and everyday problems of middle-America. Also, however, not one to merely show the problem and then walk away, Romero offers hard alternatives, all of them tied up with honor and being true to one's self, if no one else. Furthermore, as has happened in most of Romero's films, the presentation works well.

Knightriders is George Romero's tour de force. Passing no judgments, he says, "This is life; this is the good and this is the bad. Sometimes the good guys win, sometimes the bad guys win. Sometimes they

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Media

Back in the Stocks

If there is a single aspect of sf media taken most for granted, it is the "backstock" of the average retail bookstore's sf section. Those copies of *Great Brain Robbery* or *Five Fates* no one ever seems to browse, let alone buy, have been staring at bookstore regulars from the same shelf, in the same condition (dusty, yellowed, thumbed), and in the same position (spine-out, always bracketing something that sells more briskly, like the *Star Wars Punch-Out and Eat Book*) year in, year out. Titles differ, but every regular buyer should be familiar with the books with the prices so temporally disproportionate to those of the current offerings that it's clear their permanent home is on the rack. Their sale is so unlikely as to provoke jokes; no one would buy them *seriously*, and they lend a comforting initimacy to the topography of one's local watering hole for sf literature. They seem like a constant.

As with all things changeless, the immortality of these epics and others — all of which compose the sf backstock of any store — is not as ironclad as it might appear. The backstock is in trouble.

As television churns out blander and blander pap to sell silly products, as films become the province of fiscal ramrods over artists, so has the publishing industry (co-opted by swelling corporate partnerships) turned its eye toward maximization of profit as an overriding concern. This eye is the malignant, Cyclopian one; the one that wants *purely* to generate money. At any cost.

In the case of sf backstocks, the titles that never sell and the oldies that keep on, it works like this: The arena is very much like the rock and roll record industry in that residual sales are meaningless. One album is given one promotion for a return of one peak sales figure. Each release has a limited time to peg a certain sales quota or it is deemed less than successful; after that initial return, it is largely forgotten. The gravy that comes from sales months or years after release is insignificant to the parent label company.

"Supermarket novels" are the book equivalent of rock albums. You'll notice different "blockbusters" dangling from that rack by the checkout stand almost week-by-week. Most are flops, but enough blast off to balance the tally in a system where one such blockbuster can support twenty miscalculations. These novels have no shelf life whatsoever, and the publishers know it. They become much like those TV shows that get three weeks to establish an audience — not a second more — before being introduced to the dumper.

Science fiction book sales in toto depend heavily on the slow but steady movement of books over long periods of time. Sf rarely rhymes with "blockbuster" (though in recent years the genre has been represented in the high-sales category — mostly by pretty pallid, low common denominator stuff), and their stately generation of money is parsecs distant from the one-week novel sweepstakes favored by publishers who seem to want nothing more than to hurry onward to the next winner.

That is Crisis #1, for all those newer writers who may never get a chance at those slow and steady sales after being opted out by next week's wave of new books. Today's book turnover in the industry is astoundingly high. All those Hugo and Nebula Award winners may find themselves sharing boxes of returns (a charming credit process wherein the retail outlet rips the cover from a paperback, sends the covers back to the publisher for compensatory credit for the no-sale, and trashes the body of the book. Cheaper, natch, and not *nearly* as much postage!!).

Here's Crisis #2, for all the warhorses who are still alive and well in present-day backstocks: Publishers are, in many cases, redistributing their warehouse space according to financial quotas. Sure, science fiction makes roughly as much money as the panflash novels, but takes a much longer time doing it. Publishers are interested in the long run only when it comes to best-sellers; otherwise, if a specific author, series, or genre (anything that can provide a category to be columned and graphed) fails to make *X* amount in *Y* time — out. The operative phrase is "out of stock at the publisher," which means out-of-print.

Warehouse space for all books not in retail outlets must be rented, bought, or built — a formidable proposition when one considers *millions* of books. More to the point, millions of books (even when they're sitting in a warehouse) constitute a taxable asset for the publisher, and the true value of such books dwindles yearly to everyone except the IRS. There naturally comes a convergence point at which it is cheaper for the publishers to destroy the books — which constitute many a backstock — rather than continue paying swelling taxes and maintenance on them. Ongoing litigations may exempt publisher's warehouse stocks — but for now the danger does exist.

In the meantime, a lot of Poul Anderson oldies might hit the shredder in order to provide space for quicker-return items. Fill in the name of the popular sf author of your choice.

Also in the meantime, Stephen King wrote that "the handwriting is on the wall for the hardcover book, I think..." Paperbacks, born of WWII economization, are now the mainstay of the industry (the paper has not gotten much cheaper but the binding processes sure have). Hardcovers now compete with the aforementioned rock albums for the most outrageous list price, making hardcover-sized paperback "originals" inevitable. *The Sword of Shannara* came into the world this way along with countless others all later reproduced as "mass-market" paperbacks (normal size) at the usual prices. The difference here is that the original larger edition has a pricetag somewhere between $5 and $7; more than the usual paperback, but about half the cost of a version between hard covers, which may be reserved in the near future for best-sellers or favorites only. You know: *Childhood's End* and *Stranger in a Strange Land* rather than *The Mind Game* or *Gloriana*.

And if this sounds overly distressing... there's always television. *David J. Schow*

Books

A Planet in Arms, Donald Barr, Fawcett Books, $2.25
Too Long a Sacrifice, Mildred Downey Broxon, Dell Books, $2.50
Valis, Philip K. Dick, Bantam Books, $2.25
Dragonslayer, Wayland Drew, Ballantine Books, $2.75
Savage Empire, Jean Lorrah, Playboy Press, $2.25
Masks of the Illuminati, Robert Anson Wilson, Pocket/Timescape Books, $2.95
The Shadow of the Torturer and **The Claw of the Conciliator,** Gene Wolfe, Pocket/Timescape Books, the first $2.50 in paperback, the second $12.95 in hardcover
Sword of the Lamb, M.K. Wren, Berkley Books, $2.75

There is a peculiar subgenre that lies at the intersection of fantasy and science fiction. It is written almost entirely by women, deals with a society whose members possess magical or psionic abilities, and concentrates on exploring the effects of such abilities on individual characters and on the society as a whole. The usual motivating plot is one that relates to love in some way (though often the love of a man for his son, say, or of a group of friends, rather than traditional male-female love), and an external conflict related to the society as a whole. A writer in this subgenre invariably writes sequel after sequel, producing sometimes as many as a dozen novels set in the same world. The genre has a body of devoted fans, and there are even fan organizations and conventions devoted to this kind of literature. Personally, I enjoy the genre, though I find the claims of some of its practitioners overblown.

Anne McCaffrey, Marion Zimmer Bradley, and Jacqueline Lichtenberg are perhaps the best known writers in the field. Jean Lorrah, author of *Savage Empire*, is a new entry. Her book is an obvious attempt to write within the conventions of the field, and her love for similar writers is clear.

The world of *Savage Empire* is divided into two societies: the Aventine Empire, obviously modeled on the Roman, and the lands of the barbarians. The Aventines are possessed of the power of Reading, apparently psionics of some kind; the barbarians are Adepts, apparently practitioners of magic. From time immemorial, they have been warring, with the barbarians gradually pushing back the borders of the Empire. A Reader once exiled from the Empire has found service with the barbarians, and his powers, combined with those of the barbarians, threaten to overwhelm the Empire. Thus the protagonist, a Master Reader, enters the barbarian lands to try to find the exiled Reader and stop him from siding with the barbarians. Instead, he receives an education in the ways of the world and finds love. By the end of the novel, it is clear that the conflict between the Empire and the barbarians can be resolved, but that resolution is left for future sequels.

Lorrah is a deft and competent writer, and has thought out well the relationship between Reading and Adept magic. Her world, however, shows less evidence of thought; indeed, it is entirely unconvincing. There is apparently little or no communication between the Empire and the barbarian lands, else the Empire would have a better picture of doings in those lands. Yet, the two have been warring for ages. It is more likely that a certain degree of trade should exist. The political structures of the two lands are more convincing, the Empire being a constitutionally limited autocracy, and the barbarian lands a set of feudal domains. However, one element which Lorrah introduces to justify the actions of her characters is an entirely gratuitous and rather annoying Nietzscheism. Because her characters are more powerful mages and psychics than her countrymen, they deserve to rule — that is, the superior man has the right to dispose of the lives and property of others. A frightening concept, and one which Lorrah tosses off without investigating the consequences.

On the whole, *Savage Empire* is an entertaining though flawed first effort, good enough to justify looking for Lorrah's next novel.

M.K. Wren's *Sword of the Lamb* is a peculiar novel — a sort of science fiction family epic. If it were an historical novel, it would have been advertised like this: "In the last days of the Confederation, Alexand was born to the House of Dekoven Woolf, one of the most powerful houses of the Directorate. Cursed with a conscious, he would find passion and power as the tidal wave of history swirled across his destiny and that of his love..." You get the picture.

The Concord is an oligopolistic feudalism in which the only right permitted the serfs is freedom of religion. The thirst for Liberty is the one historical force which cannot be denied, and consequently the society is subject to discontent and rebellion. The leaders of the oligopoly are faced with a choice between reform and oppression, and are divided as to which policy to pursue. In the past, the Concord quashed a separatist Republican movement that arose in the Centauri system, the only human-inhabited system outside Sol; a revolutionary underground known as "The Phoenix" remains from the scattered forces of the Republic. Alexand, the eldest son of the House of Dekoven Woolf, is rapidly caught up in political intrigue among the ruling families, with his love, Adrien, as the prize. His younger brother, Rich, secretly joins the Phoenix; while Alexand, like all members of the aristocracy, is conscripted for two years in the military, whose main job is massacring striking serfs.

Sword of the Lamb is the first in a series of novels which will continue the saga of the House of Dekoven Woolf. It is fairly well written, but it is science fiction only in that it takes place in the future; the technolgy is little different from today's, save the existence of starships and the replacement of submachine guns with more arcane weaponry. Though of necessity a political novel, it makes no attempt to consider the philosophical questions of politics and economics. The prose is workmanlike but unspectacular. The characterization is somewhat two-dimensional. In short, *Sword of the Lamb* is a family saga transposed onto a science fiction framework, but little else. Like similar sagas, it is addictive reading. The conflicts among the major characters, like those of a soap opera, become compelling. *Sword of the Lamb* is neither great literature nor good SF, but it is a "page-turner."

I wonder how many people read Kenneth Roberts these days? He was one of my mother's favorite writers when she was an adolescent, and consequently I read most of his books when in my teens. He wrote historical novels, usually dealing with the American Revolution or the young Republic. His concern with liberty was paramount, and his plots were first rate. Most interestingly, he had a talent for villains, who were motivated by greed and stupidity, and hence were entirely believable. Nonetheless, Roberts was able to compel the reader to hate them or at least the stupidity and greed with which they were attached. Regardless, his *Arundel* and *Oliver Wiswell* must be considered two of the best novels about the Revolution.

The reason that I mention Roberts is that Donald Barr, author of *A Planet in Arms*, reminds me of his fiction. The book deals with a revolution on a planet that has recently won its liberty from a Terran Empire, and has much the feel of Roberts' fiction — and of Heinlein's revolutionary novels. *A Planet in Arms* has an intriguing plot, witty writing, three-dimensional characterization, and fast-action: in short, everything which adventure fiction requires to transcend its genre. It is not science fiction in any real sense, since the technology is really that of World War II with different names for the machineguns.

Rohan's Planet, having won its independence from Earth, establishes a British-style government. During the first election, the self-styled Freedom Party wins a majority of the chamber and rapidly plunges the planet into economic disaster through leftist economic policies. Partially to pay its debts and partially to expropriate the "creditor class" which it feels has wrongfully acquired wealth through manipulation during the Revolution, it embarks on a conscious policy of hyperinflation. When the economic system begins to break down, it institutes a law requiring creditors to accept currency at its face value. The result is that creditors are pursued and tracked down by debtors who mercilessly repay them in worthless paper. (Precisely this situation occured in Rhode Island under the Articles of Confederation; *Planet in Arms* is filled with similar historical parallels.) Meanwhile, the Freedom Party is taken over by a would-be dictator, and repression ensues. The major characters therefore stage a revolution to restore fiscal sanity to the state.

The theme of libertarian revolution is a common one in science fiction, but has rarely been as deftly handled as by Barr. The only complaint I have is that he does not adequately deal with the philosophical dimension of political conflict; but since he deals very well indeed with almost every other

aspect of the novel, this amounts to a petty complaint. *A Planet in Arms* is a superb book.

"The most brilliant SF mind on any planet" says *Rolling Stone* on the cover of Philip K. Dick's *Valis*; one wonders how they know. The quote is representative of, however, the recognition and acclaim which Dick has received both within and without the SF ghetto. Despite critical and academic acclaim, Dick continues to sell rather poorly, the fault lying in the cerebral and often confused nature of his prose.

Dick may not be the best SF mind on any planet, but he is certainly the most idiosyncratic on this planet. The themes he chooses are bizarre in the extreme, as loony as some explored by Heinlein in the last few years. For example, one novel deals with a world in which objects begin regressing in time: look away from the fridge, and five minutes later it will have turned into a 50's vintage fridge with rounded corners and a level handle; five minutes later it will be an 1890's tin-plated icebox. As a result, much of Dick's fiction is either poorly thought out or simply incomprehensible; but much of it is extremely good.

The protagonist of *Valis* is Horselover Fat, a German translation by way of Attic Greek of Dick's own name. Fat is a middle-aged man who has experienced a nervous breakdown and used LSD for an extended period. At some point, he believes he sees the divine light of God, and starts to develop a weird cosmology of his own. This universe, he believes, is an essentially flawed and evil one, but an entity from a more perfect universe has invaded and is seeking to bring love and justice. This entity is alternatively Jesus Christ or a secret satellite manned by three-eyed aliens from the future. Eventually, Fat half-persuades his friends of his vision, and then meets another group who have come to similar conclusions independently.

In essence, *Valis* is a novelistic exploration of questions of epistemology and solipsism — the sort of thing which Robert Anton Wilson does but without, perhaps, Wilson's sense of the absurd. It is one of Dick's more coherent novels and is certainly worth reading for those who don't mind a little mental work in their leisure time. While Dick's ideas are intriguing and he does manage, at times, to transmit a sense of unexpected and chill syzygy, this is not enough to fill the gap caused by abandonment of the traditional tools of storytelling. The plot is minor, the characterization poor, and the prose unexciting; philosophy and deft manipulation of mood are not enough to carry the book.

One suspects that the title of Robert Anton Wilson's *Masks of the Illuminati* contains the word "Illuminati" only to draw in readers familiar with Wilson and Shea's landmark *Illuminatus* trilogy. While the novel deals with Crowley's Order of the Golden Dawn, which may be considered to have some relation to the Illuminati, the Illuminati per se have little to do with the book. Similarly, one suspects that the book is published by Pocket/Timescape as "fantasy" only to get it on the SF shelves; in fact, it is a sort of pseudo-historical novel.

Wilson is a writer whose work has received little attention, but whom I consider to be one of the best SF authors now writing. He explores essentially philosophical themes as does Dick in *Valis*, but his prose is spectacular and filled with a dark sense of humor. He writes, as you will, as Vonnegut might write if Vonnegut were a libertarian warlock with a firm acquaintance with science, arcana, and the problems of epistemology. His best-know work is the *Illuminatus* trilogy, co-authored with Shea, but his best novel is probably the marvelously ambiguous *Schrodinger's Cat*.

Masks of the Illuminati deals with a young Victorian nobleman who joins the Order of the Golden Dawn to pursue his studies in the arcana and shortly finds himself in a magical duel with the evil wizard, Aleister Crowley. Pursued by horrors, he flees across Europe until he finally meets Albert Einstein and James Joyce in a bar in Switzerland. One expects that Wilson will leave the fantastic elements of his plot in ambiguous limbo, but in fact there is a rational explanation for all events — save, perhaps, where Crowley got the LSD. At the culmination of the novel, Joyce, Einstein and Crowley take LSD together in what must surely be one of the most bizarre scenes in a recent novel.

Masks of the Illuminati is an essentially minor work by a master, but for all of that makes amusing and thoughtful reading. Those unacquainted with Wilson's work would do well to pick up a copy.

I've never been much of a fan of Gene Wolfe, a writer whose work has been highly touted within the genre, but *The Shadow of the Torturer* and *The Claw of the Conciliator*, the first two books in what will become a tetraology entitled *The Book of the New Sun*, are more than enough to make a believer out of me. This is fantasy as it should be written. Forget the sword and sorcery, the mighty thewed warrior, and the colorless prose of Le Guin and imitators; forget Tolkien, for that matter. Wolfe is the master of the genre.

Wolfe's prose is mellifluous, complex, and rhythmic. SF and fantasy have produced more writers of power than of elegance in prose, but Wolfe is both. His command of the English language and the nuance of style are breathtaking; his ability to provoke mood and emotion profound.

Wolfe does not make the mistake, however, as so many of SF's best stylists do, of abandoning the strengths of science fiction as he attempts to integrate the strengths of mainstream fiction. Excellence of prose does not, in Wolfe's novels, mean loss of vision or lack of powerful themes. Though the books are hypnotic in tone and lazy of pace, they are filled with action, events of awesome import, and ideas.

Severian, the protagonist of the series, is born into the torturer's guild in a decadent world of the far future whose resources have been exhausted and whose technology is slowly dying. He falls in love with a noblewoman confined in the prisons of the torturers and, upon her death, sets out to wander the world. There he meets diverse adventures and, it seems, becomes by the fourth book the autarch of the world. The plot in and of itself is not an uncommon one, but the writing and themes are. This is fantasy as it should be written: portentous events, marvelous beings, wielders of great powers, a land of terror and delight. If Wolfe never writes another word, he will have made his mark.

Mildred Downey Broxon's *Too Long a Sacrifice* is a strange and touching novel set in Northern Ireland. Tadgh MacNiall, a bard, becomes enchanted by the Sidhe, and goes to live eternally with them in a city beneath the waves. His wife, bereft, joins him and they live unhappily and dreamily among the Sidhe for centuries. Then the waters of the elfin city begin to fill with blood, for the land above is torn apart by bloody conflict; and the Sidhe, about to die, free the two humans to return to their world. Upon leaving, however, the two become separated; and Tadgh falls in with a group of IRA terrorists, while his wife makes friends with a pacifist Catholic girl. They become the pawns of powers they cannot control; and the Goddess and the Wild Hunt contend while the bombs blow in Belfast.

The main strength of *Too Long a Sacrifice* is Broxon's firm grip on the Irish mythos and an ability to evoke its power and a mood of wonder in the reader. Its main weakness is the prose, which is no more than competent and rather stilted in places. On the whole, however, it is head and shoulders above most of the fantasy being published today, and well worth reading.

Greg Costikyan

Vermithrax, the last and most feared dragon, has migrated from his turf in Greece to the once peaceful hamlet of Swanscombe in post-Roman England. The local residents have reached an oppressive accommodation with the dragon: a young woman selected by lottery is offered at each equinox and Vermithrax restrains the urge to prepare *village flambe* for another six months.

A small band of villagers sneaks off to Cragganmore to beg Ulrich, the last sorcerer in the area, to exterminate the dragon. The king doesn't want Vermithrax annoyed with such efforts; the last attempt provoked the dragon to an awful rampage. Tyrian, the king's agent, follows the band to apparently demonstrate Ulrich's impotence by skewering the ancient sorcerer. To Galen, Ulrich's apprentice, falls the burden of slaying the dragon.

Galen is a high-potential underachiever; plenty of Talent but no discipline or consistency. His spells frequently fizzle or go astray. Ulrich's now-white raven is an example of Galen's level of achievement. Galen returns to Swanscombe with the villagers and conjures a landslide to seal the entrance to the dragon's labyrinthine lair.

The celebrations end when the earth trembles; the king imprisons Galen as Vermithrax breaks loose in a vengeful fury. Galen is sprung and this time goes after Vermithrax with a charmed lance forged by the village smith. He fillets three dragonets waddling through the caves and harpoons Vermithrax, succeeding only in enraging the dragon.

Galen is finally led by an omen to sprinkle the ashes of Ulrich's pyre on the underground lake of flames at the heart of the dragon's lair. Ulrich is resurrected and,

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Games

Amoeba Wars

Design: Random Games, Inc., Garry Donner
Development: Mick Uhl, Richard Hamblen
Mail order and retail sales
The Avalon Hill Game Company, $16.00

Then there's the one about the (insert appropriate ethnic group) contest judge who was supposed to pick out the best entry as the title for a science fiction game but instead chose *Amoeba Wars*. Except someone at Avalon Hill missed the punch line.

Aside from contending strongly for the silliest title of the year award, *Amoeba Wars* is one of the more misleading. The subject matter is not the germ theory of disease and the advertised space amoebas are hardly belligerents in war. These amoebas are, if anything, vigilantes for peace, for the only things they swallow during the course of the game are nasty warships manned by nastier people.

We pick up the story as stirring strains of martial music play in the background and as the umpteenth imitation Roman galactic Empire dissolves into between two and six federations of planets...The strings announce the mysterious appearance of the space amoebas, which "engulfed anything that strayed into their path." (Apparently, they soon dropped stars and planets as dietary staples.) The lords of the disintegrating Empire panicked and converted the two superdreadnoughts — regulation issue for all space Empires — into Doomsday Machines (discretionary issue), which promptly went berserk (ominous horn music). The smaller federations formed during the post-Collapse chaos (flute solo), and then simultaneously embarked on campaigns to conquer the proud Imperial capital planet, Saestor (blare of trumpets). The capture of Saestor, you see, would symbolize that the Empire would be remade in the victorious federation's image (full orchestra and then fade).

The attractive cover illustration is part of this space opera image, for it could just as easily be the art to a poster announcing the latest B-movie in Luridcolor. *Amoeba Wars* makes no pretensions to science and few to science fiction, inviting players to evaluate its merits as a game. This is a wise decision, because *Amoeba Wars* can be a lot of fun to play.

Taken as an isolated example from the adventure game field, *Amoeba Wars* is quite acceptable for what it is. However, when considered as part of the whole, the game and its premise are part of an alarming trend. There is nothing wrong with science fantasy or spoofing science fiction, but when these two genres crowd out hard science fiction, something is wrong. Too many game systems are prettied up with science fiction exteriors, though the systems have only a passing flirtation with any extrapolations of science.

It is unfair to single out *Amoeba Wars*, which aspires only to be an abstract conquest game, as a prime offender against the rapidly diminishing bastion of serious science fiction. One could just as easily point to *Sword and the Stars*, which is also a good game, as a superfluous transposition or inferior copy of the excellent *Empires of the Middle Ages* system. However, *Sword* does not gratuitously throw in an asteroid belt — with no effect on play — which girdles no less than seven planetary systems. (Consider: seven stars between two and six light years distant from each other — at a conservative estimate — surrounded by a continuous chain of solid detritus. One of Larry Niven's ringworlds would be lost anywhere in such a belt. And where does all that mass come from?) This and similar details will not irk the casual player, but conspire to give an annoying impression of scientific illiteracy.

Back to the game.

Amoeba Wars is best described as a sophisticated version of the perennial mass-market favorite *Risk*. Each side starts small, with but one home system, and snowballs to mammoth proportions unless impeded by each other, a Doomsday Machine or space amoebas. The victory conditions do not require the capture of the entire old Empire, but do insist that a majority (the number varies with the players) of the six systems circling Saestor be taken, and then the Imperial capital planet itself. As the other players will direct their fleets in incessant attack upon those of a player on the verge of victory, it is often necessary to exterminate a goodly portion of one's opponent's forces before a win can be achieved.

Play starts with the space amoebas infesting the seven central systems of the Empire. Before the players can do anything with their complements of scouts, cruisers, dreadnoughts and a monitor, the amoebas begin to randomly spread to neighboring systems. The space amoebas will, given time and no interference, spread out to cover the entire board. Regrettably for players of amoeboid descent, this game was designed with a distinctly pro-human bias, whatever the title may imply. The humans can produce ships faster than the amoebas can replace their losses.

Each player is dealt a hand of three cards, numbered from 0 to 44. The first player places his choice of card in front of him, and so on until all plays for the turn are revealed. The player with the highest-numbered card "moves" first, and may use his card *and* all lower numbered cards. There is strategy in addition to luck of the draw in the order of turns: the fifteen or so highest numbered cards have bad effects upon a player's forces, such as the arrival of still more space amoebas or the loss of all production points for that turn.

A player then builds his ships, being limited by the counters available and, of course, his production points for the turn. A ship's production point cost is one more than combat value and, as no system is worth more than two production points per turn, a player does not build up a gargantuan fleet overnight. The battlestar, of circular design, is the best of the mobile ships, since the monitor, as the name implies, can only guard the system in which it is produced. Ships must be placed in the home system or in a system connected to the home system, which means that the player evicted from his home system is marooned in deep space without an engine.

After the player deploys his new toys, he can either end his turn or work out his aggressive tendencies on nearby systems. "Vacant" planetary systems must be pacified, enemy ships can be met in batttle, and the poor space amoebas can be mugged. Though the combat procedure varies slightly depending on the nature of the force being attacked, a player is basically comparing two rolls of the die as modified by the values of the attacking and defending forces — perhaps not one of the more inspired methods of combat resolution in captivity, but certainly one which works well in practice.

No more than five ships may attack at one time. Playtesting almost certainly revealed that without this rule players constantly build up "invincible armadas"; invincible, that is, until one collided with another. This tactic made for boring play and was banned as unfair to amoebas and unoccupied planetary systems.

When ships fight it out between themselves or with a Doomsday Machine — which was once part of the ship family anyway — the combat values of the ships are added to the die-roll. In battle against the space amoebas or an empty solar system, the number of planets is added to the die-roll just as the number of ships is. (Apparently, one amoeba pops up for each planet in a system.) All the ships on the losing side of a ship-to-ship battle are removed; only one ship is removed if a force loses against an empty planetary system, or two in a loss to space amoebas. A tie means that both sides suffer as if each lost, which nicely cuts down on counter congestion from time to time. If ships win against space amoebas or against a planetary system, the defending system is occupied.

All of these rules mean that there is always a chance of a force losing a battle against a system or space amoeba, so the

player dogged by bad luck had better be prepared for long bouts of frustration. Nowhere is this more obvious then when a player is ready to attack Saestor and go for the win. Saestor, ostensibly because it's the central planet of the Empire and practically because the designers wanted to make players sweat for a win, counts as six planets. (Of course, when I played the game for the first time, it took 15 separate tries before one player breached Saestor's defenses. He did it on a tie die-roll, and lost all his attacking ships. We promptly surrendered *en masse* to the amoebas, who could not be less merciful then the game system.) Strategy purists dislike this particular mechanic, allowing that though the high number of die-rolls tends to average out, individual players can be stymied or disproportionately successful on the whim of the die. Those same purists are quick to whip out the very same theorem to explain away a loss, but have been known to conveniently forget it after a win.

At the end of a player's turn, he gets a free move, with which he can reposition one of his fleets. This time-honored mechanic has made appearances in games as diverse as *Risk* and *Third Reich*.

A curious omission in the design is a lack of diplomatic rules. Though it is not explicitly stated, players cannot cooperate with one another, except by attacking a mutual enemy during their turns. There is no reason I could see for preventing players from combining forces, making diplomatic agreements, or jointly occupying systems other then Saestor, except that the extremely brief rules would then be merely brief. Experimentation with the incorporation of diplomacy into the system leads me to believe that the game could only profit from the inclusion.

The rules are no paragon of clarity, though they could have been without an increase in length. The text was written to minimize legalese, probably because the writers believe that instructions are more easily stomached when so disguised. While the *Amoeba War* rules do not approach the classic obfuscation of *War of the Ring*, they will not exempt the writers from a thorough refresher course in Freshman Comp.

The rules deficiencies are minimized by a well organized play aid card. Even the probabilities for success and failure for all possible attacks are worked out for the players. The map is above the usual Avalon Hill standard, and could have been marginally more functional if separated into two, rather than four, sections. The cards are unremarkable, except for a whimsical picture of an amoeba being zapped. The counters are pretty and easy to read.

Amoeba Wars could do with less of a luck influence, and a little more imagination injected into the background. The amoebas, the Doomsday Machines and the cards lend the game needed color, and there are many worse ways to spend an afternoon. As an investment, *Amoeba Wars* is a good risk, whether or not the reader groans and pardons the pun.

War of the Worlds

Design: Allen Eldridge, with Stephen Cole
Retail sales only
Task Force Games. $9.95

When game designers used to talk about famous science fiction or fantasy novels which could be turned into games, H.G. Wells' *War of the Worlds* was always conspicuous by its absence. Not much could be done with a Martian romp dramatically interrupted by a fatal susceptibility to Earthly bacteria. A simulation of these plot elements would have the Earth player frantically moving his pieces to the far ends of the playing surface, hoping that as many as possible could escape the deadly attentions of the Martian tripods until the Martians succumbed to the disease.

So when Task Force announced that it was to release a game based on H.G. Wells classic, the reactions varied from yawns to snickers. Designer Eldridge, no newcomer to the game field, anticipated this problem and "solved" it by revoking the late Wells' dramatic license. The new humans discovered a weakness in the vaunted Martian tripod, and the tripod's ability to wreak havoc was limited to the immediate London area. If the emasculation of the previously fearsome Martians wasn't enough, the bacteria of Earth suddenly lost their power to fell the Martians, or at least for the period covered by the game. In a comparatively minor change, the Martians decided that their objective was only to take out London, for once that city had fallen, the rest of the world was to follow.

Can these changes be accepted? Not really. If, for instance, the same liberties were taken with J.R.R. Tolkien's *The Lord of the Rings*, the One Ring could become no more than a CrackerJacks prize, the Free Peoples would invent the Gatling gun to compensate for Mordor's superior numbers, and Gandalf would want to conquer Mordor as part of the Valar's imperialistic grand plan. The designer who tried to pull such a fast one over the gaming public would be lucky to escape the English-speaking world with tar-and-feathers. Since Wells is not as revered as Tolkien, the game of *War of the Worlds* can be evaluated as something with resemblances to the book of the same name.

If the designer is inventive with the plot, he is also imaginative with his use of some of the components. The human reinforcement (called depot) hexes and combat result table are secretly selected from six cards by the human and Martian players, respectively, before the Martians land. The rest of the design rehashes some of the more popular rules of the last ten years.

The Martians land like paratroopers. The Martian player chooses his landing hexes, and then rolls to see if his units land on target. If a Martian cylinder misses, it scatters up to six hexes away. The Martian player is advised to keep well away from cities and large rivers, because his units have a large chance of being eliminated in those types of terrain. Each cylinder contains three tripods, and only ten cylinders enter play evenly spaced over ten turns, so the loss of just one can spell disaster. (If the Martians lose two cylinders outright by the seventh turn, don't play the game out.)

The Martians want to destroy as many city hexes as possible and preserve the maximum number of tripods and cylinders. A city hex is destroyed when a Martian unit enters it. The middle part of the game usually sees the Martians playing a furious game of tag, trying to move through as many city hexes as possible, with human *kamikazes* holding the line and once in a while wiping out a tripod.

The game would be a human walkover, except that the Martian player decides when to initiate hostilities. The human reinforcement rate is limited until the first Martian unit moves out of its landing hex or attacks a human unit, and the humans cannot attack the Martians until then. The best Martian strategy is to land his first through fifth turn complement on one side of the major mass of city hexes, and to land the sixth through tenth turn complement on the directly opposite side. The best attack turn varies between the third and the sixth (the last only if one of the first cylinders was eliminated).

The human combat results table gives results by the type of attacking unit(s). Sometimes it is advantageous to attack with only one type of unit (artillery, cavalry or infantry); other times, with particular combinations. The designers' notes claim that because there is no mathematical difference between the six possible tables, there is no tactical difference. I'm not sure about this; a table which favors combinations of types over single units gives the human player problems, for he has to experiment to find the best combination. (My calculations were somewhat confused during the first playthrough, when my opponent discovered one die had a blank face, a 2, a 3, two 5's, and a 6.) The Martian combat table is a variation on that of *PanzerBlitz*. A Martian unit must disrupt or destroy a human unit when it attacks, or else its way will be blocked. Since the table depends on the number of units in the defended hex, and the human stacking limit is two, the Martians have a 65% success chance with a median attack. This is not enough, I think, to give the Martian player a good chance of victory against a human player familiar with the tricks of the game.

If the players can accept the radical revisions to the plot of the novel, they have a game which should prove tense for the first five or so plays. After that, *War of the Worlds* is a solved puzzle. But how many people play a single game even that many times any more?

High Fantasy & Adventures in High Fantasy

Design: Jeffrey C. Dillow
Mail order and retail sales
Reston Publishing Company, Inc., $13.95 each

The fantasy role-playing game glut has not yet produced a product which is entirely satisfactory as an introductory vehicle. (For that matter, there isn't a completely polished intermediate or expert level set of rules either.) *The Fantasy Trip, Tunnels and Trolls* and *Basic Dungeons and Dragons* each have their own idiosyncratic pitfalls, though all three have been the entry level game for quite a number of players. Now *High Fantasy* makes a serious bid to be included in this select group.

GAMES RATING CHART

SCIENCE FICTION & SCIENCE FANTASY

Title	Pub	Pub Date	Price	Accep	%	Comp	Time	Soli
1. Traveller	GDW	7/77	12	7.5	39	6.2	5	5.5
2. Imperium	GDW	12/77	10	7.3	32	6.1	6	2.5
3. Creature...Sheboygan	SPI	4/79	8	7.1	63	5.0	1	6.5
4. DEV	MGC	78	3	7.1	41	5.0	2	6.5
5. Freedom in the Galaxy	SPI	6/79	20	7.1	36	7.0	7	5.5
6. Starfleet Battles	TFG	79	13	7.1	29	6.5	2	6.5
7. Ogre	MGC	5/77	3	7.0	52	4.8	1	6.5
8. Cosmic Encounters	EP	76	12	7.0	23	3.5	1	2.0
9. Voyage of the Pandora	SPI	1/81	na	6.9	81	6.5	2	9.0
10. Dark Nebula	GDW	2/80	6	6.8	11	5.8	2	2.5
11. Battlefleet: Mars	SPI	4/77	18	6.8	32	6.8	6	3.0
12. John Carter of Mars	SPI	5/79	20	6.7	32	6.0	4	5.5
13. Stellar Conquest	MGC	2/75	13	6.7	22	5.8	6	3.0
14. Asteroid	GDW	80	6	6.7	19	5.5	2	4.0
15. TimeTripper	SPI	7/80	8	6.5	12	6.0	2	7.0
16. Objective: Moscow	SPI	3/78	27	6.5	18	5.0	30	5.0
17. Triplanetary	GDW	9/73	10	6.5	12	5.7	2	4.6
18. Villains & Vigilantes	FGU	na	6	6.5	5	na	na	na
19. Wreck of the Pandora	SPI	5/80	8	6.4	69	6.0	3	7.0
20. Space Opera	FGU	80	16	6.4	8	6.0	4	1.0
21. Snapshot	GDW	6/79	8	6.3	19	5.3	1	4.0
22. After the Holocaust	SPI	1/77	18	6.3	22	7.5	7	7.0
23. Mayday	GDW	2/78	5	6.2	21	4.9	2	4.0
24. Starship Troopers	AH	7/76	15	6.2	53	5.0	2	3.5
25. Starweb	FB	76	10	6.2	12	5.5	na	na
26. Invasion: America	SPI	12/75	18	6.1	30	5.5	6	4.5
27. Bloodtree Rebellion	GDW	11/79	13	6.1	28	6.0	5	2.5
28. Doctor Who	GW	na	20	6.1	4	na	na	na
29. Belter	GDW	6/79	12	6.0	11	5.8	4	2.5
30. Starforce	SPI	9/74	12	6.0	45	6.0	4	4.5
31. Outreach	SPI	11/76	12	6.0	36	6.0	5	4.0
32. Dune	AH	6/79	15	6.0	25	na	na	na
33. Robots	TFG	80	4	6.0	11	5.8	2	5.5
34. Star Fall	YP	8/79	13	5.9	8	na	na	na
35. War in the Ice	SPI	1/79	18	5.9	26	6.8	5	4.5
36. Star Soldier	SPI	1/77	12	5.9	27	7.1	2	3.5
37. Godsfire	MGC	79	16	5.9	14	7.1	8	1.5
38. Starfleet Battle Manual	GS	77	6	5.9	10	6.3	5	1.0
39. Warp War	MGC	77	3	5.9	37	4.5	1	5.0
40. Time War	YP	8/79	13	5.9	8	na	na	na
41. Marine: 2002	YP	12/79	17	5.8	6	6.1	4	5.0
42. Starfire	TFG	6/79	5	5.7	8	na	na	na
43. Trek-80	JG	na	15	5.7	3	na	na	na
44. StarGate	SPI	4/79	4	5.7	30	5.5	2	6.0
45. Olympica	MGC	na	3	5.6	24	5.5	1	2.0
46. Space Quest	TYR	na	na	5.6	5	na	na	na
47. Ice War	MGC	78	3	5.6	23	5.0	2	6.5
48. Lords of Middle Sea	TC	7/78	10	5.6	6	na	na	na
49. Ultimatum	YP	6/79	na	5.6	9	4.5	1	1.0
50. WorldKiller	SPI	3/80	8	5.6	59	3.5	1	4.0
51. Double Star	GDW	3/78	10	5.6	15	5.5	5	5.0
52. Cerberus	TFG	8/79	4	5.6	7	na	na	na
53. Artifact	MGC	80	4	5.5	10	5.5	2	6.0
54. Alpha Omega	AH	7/77	15	5.5	11	na	na	na
55. Chitin: I	MGC	77	3	5.4	28	5.8	1	3.5
56. Awful Green Things	TSR	80	8	5.4	28	5.2	2	6.0
57. Vector 3	SPI	4/79	4	5.3	30	5.8	2	3.0
58. Titan Strike	SPI	4/79	4	5.3	29	6.0	2	5.5
59. Kung Fu 2100	SJG	80	3	5.3	16	5.3	3	5.7
60. Gamma World	TSR	78	10	5.3	21	na	na	na
61. Hot Spot	MGC	79	3	5.3	12	5.9	1	2.5
62. Starships & Spacemen	FGU	na	7	5.3	8	na	na	na
63. Black Hole	MGC	78	3	5.2	23	5.0	2	6.5
64. Warriors Green Planet	FF	na	6	5.2	4	na	na	na
65. Rivets	MGC	79	3	5.2	30	5.2	1	2.1
66. Invasion of Air Eaters	MGC	79	3	5.2	18	5.6	1	2.4
67. Strange New Worlds	BL	na	10	5.1	6	na	na	na
68. Asteroid Zero-Four	TFG	6/78	4	5.0	9	na	na	na
69. Strike Team Alpha	GS	78	7	5.0	2	na	na	na
70. Metamorphosis/Alpha	TSR	76	5	5.0	23	6.0	9	1.0
71. War Sky Galleons	FF	na	6	4.8	4	na	na	na
72. Space Marines	FnT	na	6	4.8	4	na	na	na
73. Star Fighter	BL	na	na	4.7	5	na	na	na
74. 4th Dimension	TSR	79	10	4.6	6	na	na	na
75. Darkover	EP	79	12	4.5	7	4.5	3	3.0
76. Space Patrol	GS	77	5	4.4	5	na	na	na
77. Alien Space	GS	73	7	4.4	11	na	na	na
78. Star Probe	TSR	na	na	4.4	12	6.0	5	2.5
79. Annihilator/One World	MGC	79	3	4.4	18	2.5	1	1.5
80. Holy War	MGC	79	3	4.3	16	5.5	1	2.5
81. Galactic Conquest	FGU	na	4	4.3	5	na	na	na
82. Galactic Grenadiers	RP	na	16	4.3	5	na	na	na
83. Star Lord	FB	9/72	5	4.3	5	6.0	4	4.5
84. Rift Trooper	AW	7/76	7	4.3	5	na	na	na
85. War of the Worlds	TFG	80	na	4.3	7	na	na	na
86. Starquest	DSG	na	4	4.1	7	na	na	na
87. Colony Delta	FGU	na	12	4.1	4	na	na	na
88. Space Fighters	GS	78	5	4.0	4	na	na	na
89. Timelag	GmS	na	4	4.0	2	na	na	na
90. Superhero 2044	GS	77	7	3.8	7	na	na	na
91. Dixie	SPI	1/76	5	3.7	32	5.5	2	6.0
92. Formalhaut II	AW	na	7	3.6	6	na	na	na
93. Starfaring	FB	76	4	3.6	3	na	na	na
94. Arms Race	DC	na	na	3.4	3	na	na	na
95. Flash Gordon	FGU	na	6	3.3	3	na	na	na
96. Quazar	EG	76	12	3.1	5	6.0	12	2.0
97. Stalk-1	C-C	4/76	12	3.0	2	na	na	na
98. Cyborg	EG	78	9	2.9	4	na	na	na
99. Warriors of Dark Star	TSR	na	na	2.6	3	na	na	na
100. War of Star Slavers	AW	na	13	2.3	4	na	na	na
101. IT	DC	na	na	2.0	7	na	na	na

FANTASY

Title	Pub	Pub Date	Price	Accep	%	Comp	Time	Soli
1. Runequest	TC	8/78	12	7.4	16	7.0	7	1.0
2. DragonQuest	SPI	7/80	12	7.0	35	8.5	6	1.0
3. Melee	MGC	78	3	7.0	52	5.3	1	6.5
4. War of the Ring	SPI	11/77	20	7.0	58	8.1	6	4.5
5. Robin Hood	DSG	80	5	7.0	10	5.8	2	6.0
6. Adventures in Fantasy	EG	80	25	6.9	17	6.5	6	1.0
7. Wizard	MGC	78	3	6.9	39	5.8	1	6.0
8. White Bear/Red Moon	TC	11/76	10	6.7	16	5.0	3	6.0
9. Chivalry & Sorcery	FGU	na	10	6.7	27	7.0	6	1.0
10. Dungeons & Dragons	TSR	12/74	10	6.7	62	6.5	5	1.0
11. Swashbuckler	YP	80	7	6.7	16	4.5	2	6.0
12. QUARKS	EP	80	12	6.6	9	5.0	23	4.0
13. Death Test	MGC	79	3	6.6	35	5.8	1	1.0
14. Divine Right	TSR	79	10	6.5	18	5.2	4	6.0
15. Swords & Sorcery	SPI	7/78	20	6.5	35	6.0	3	5.0
16. Bushido	TYR	na	10	6.5	7	6.0	5	1.0
17. Nomad Gods	TC	5/77	10	6.4	12	5.2	3	6.0
18. Advanced D&D	TSR	79	20	6.4	40	6.0	5	1.0
19. Citadel of Blood	SPI	11/80	8	6.4	68	6.5	2	7.0
20. Intruder	TFG	1/80	4	6.4	10	5.7	2	6.0
21. DeathMaze	SPI	11/79	8	6.1	40	5.1	2	5.0
22. Tunnels & Trolls	FB	75	8	6.1	10	6.0	5	1.0
23. Hammer of Thor	GmS	80	19	6.1	6	6.7	4	3.0
24. Valkenberg Castle	TFG	1/80	4	6.1	9	na	na	na
25. Gondor	SPI	11/77	4	6.0	30	5.5	4	4.5
26. En Garde!	GDW	7/75	10	6.0	10	5.7	2	6.2
27. Arena of Death	SPI	9/80	8	6.0	68	6.0	1	6.0
28. Treasure Silver Dragon	MGC	80	4	6.0	17	6.0	2	6.0
29. Empire of Petal Throne	TSR	6/77	25	5.9	21	7.4	9	1.0
30. Sauron	SPI	11/77	4	5.8	39	6.6	4	5.5
31. Dungeon!	TSR	75	10	5.8	29	na	na	na
32. Sticks and Stones	MGC	78	3	5.7	23	5.0	2	6.5
33. Wizard's Quest	AH	79	15	5.6	21	4.5	2	2.0
34. Demons	SPI	11/79	8	5.6	32	5.2	2	7.0
35. Elric	TC	7/77	5	5.5	9	4.5	3	3.0
36. Sorcerer	SPI	10/75	15	5.5	36	6.0	2	6.0
37. Swordquest	TFG	12/79	5	5.5	8	na	na	na
38. Monsters Monsters	MGC	76	4	5.5	15	6.0	9	1.0
39. Beast Lord	YP	6/79	15	5.4	6	7.0	5	4.0
40. Stomp!	TC	11/79	3	5.4	10	na	na	na
41. Citadel	FGU	na	5	5.4	8	na	na	na
42. Tribes of Crane	SS	78	3	5.4	8	na	na	na
43. Lords & Wizards	FGU	na	12	5.3	8	na	na	na
44. King Arthur's Knights	TC	7/78	10	5.1	6	na	na	na
45. Ardan Grimoire	GG	79	20	5.1	11	na	na	na
46. Snit's Revenge	TSR	78	7	5.0	22	na	na	na
47. Spellmaker	BL	na	na	5.0	7	na	na	na
48. Mythology	YP	4/80	14	5.0	6	7.0	3	4.5
49. Spellbinder	TFG	80	4	5.0	6	5.8	3	3.0
50. Shooting Stars	YP	80	7	4.9	5	na	na	na
51. Dragon Lords	FGU	na	na	4.9	4	na	na	na
52. Sword Quest	TFG	12/79	5	4.9	13	na	na	na

KEY TO ABBREVIATIONS: AH = Avalon Hill; AW = Attack Wargaming; BL = Battleline; C-C = C-in-C Metalcasting; CL = Cleaver; DC = Dave Casciano Co.; EG = Excalibre Games; EP = Eon Products; FB = Flying Buffalo Inc.; FF = Facts & Fantasy; FGU = Fantasy Games Unlimited Inc., FnT = Fantac; GDW = Game Designers' Workshop; GG = Grimoire Games; GmS = Gameshop; GS = GameScience; GW = Games Workshop Ltd.; JG = Judges Guild; MGC = Metagaming Concepts; OSG = Operational Studies Group; RP = Ral Partha; SJG = Steve Jackson Games; SPI = Simulations Publications Inc.; SS = Schubel & Sons; TC = The Chaosium; TFG = Task Force Games; TSR = Tactical Studies Rules; TYR = Tyr Gamemakers; YP = Yaquinto Publications. *Acceptability Rating* is the game's overall popularity. *% Played* is the percentage of readers who have played the game within the last twelve months. *Complexity Rating* is the relative complexity of the game on a scale of 1 (simplest) to 9. *Solitaire* is a game's ease of solitaire play on a scale of 1 (nearly impossible) to 9.

High Fantasy, previously published by Twinn-K in 1978, will gain sufficient notice, but not for any merits of the game system. Reston, the new publisher, is a division of Prentice-Hall, and can push this mediocrity into a huge number of retail outlets. Reston has no illusions about the target; their promotional brochure declares it to be "in the tradition of *Dungeons and Dragons*"...but, of course, much superior. These claims are a bit more realistic, though less amusing and grandiose, than Twinn-K's original pronouncements in which they stated that the game "taught important math concepts" and did just about everything (per the ad copy) but cure the common cold.

The philosophy behind the *High Fantasy* design is in slavish imitation of *D&D*, though the actual mechanics are often quite different. A player character is one of four character classes (warrior, wizard, alchemist or animal master), though the magical fraternity is much superior to members of the other three. Spells are divided by planes, which are achieved once every four levels. The magic item list, from all indications, is taken directly from notes prepared for the author's world. I'm sure Dillow can make these items interesting and all-inclusive when he runs an adventure, but my copy of the rules came without him.

The system redeems itself with one basic concept: almost every action taken in the game is resolved with the single roll of the percentile dice. Thus, magic resistance is subtracted directly from a magician's chance of casting a spell, a defender's defensive rating from an attacker's offensive rating in melee, and so forth. Only one set and shape of dice is needed, and the most complex of charts (for combat) is not cloaked in mystery by cumbersome procedures.

Whenever a number can serve for more than one purpose, it does. The offensive and defensive ratings also reflect the damage a character can sustain. The combat chart is used to resolve all damage (though it is never explained whether armor is damaged in magic as it is in combat).

The characteristic rolls are crucial; if the player does poorly on his initial rolls, he might as well throw in the towel. The rules have the usual advice about how much fun it can be to play a challenging character (in that its values stink), but this is certainly untrue when the whole game system is stacked against you (this a linear progression percentile system). The pervasiveness of the *D&D* influence upon *High Fantasy* tells even here, for many of the problems of the original *D&D* are repeated. (For example, an otherwise well-rolled character who craps out on his money roll will go literally naked to his world.) A list of talents is fresh change for the system, but once again heavily rewards the best man with the dice.

The monster lists are to be commended for their succinctness, though there is not a hint as to how the beasties appear. The

[continued on page 30]

Designer's Notes

Universe Supplement/Adventure #1: First Contact.

As of this writing, *Universe* is just going into the art department, yet we are already in the concept stage for the project's first supplement. The 64-page book will include:

- A detailed study of *three* entirely unique, intelligent alien races, with rules for generating characters and NPC's in each.
- An adventure that sends the characters to the source of mysterious radio signals. The GM may use any of the above races as the power behind the transmissions, and may use the others as races that the primary civilization knows of; thus creating a star-spanning multi-racial empire just beyond the bounds of the human federation.
- New professions and skills for *Universe* characters. Special attention will be paid to anthropological, psychological and mystical areas, as they apply to contact with alien intelligence.
- New equipment derived from alien technology and experimental work by the federation.

John H. Butterfield

Return of the Stainless Steel Rat

Only a part of the manuscript for this game is in hand, but it includes all of the *rules* necessary for play. The remainder of the rules booklet will consist of a series of programmed loops in the form of paragraphs which will take the player(s) through the game to one of half a dozen possible confrontations with one of half a dozen possible villains thoughtfully written into the game by the creator of the SSR, Harry Harrison.

The loops themselves are currently being generated by the game's designer, Greg Costikyan (creator of the infamous *Creature That Ate Sheboygan* and other fantasies). Combining Greg's design talents with Harry Harrison's Rat (surely one of the most entertaining characters in sci-fi) should, itself, guarantee a masterpiece. But just to hedge our bets, we are using a derivation of the *Voyage of the Pandora* game system (the highest-rated and, I think, most innovative system ever to appear in one of our magazines) as the basis for *Return of the SSR*. Needless to say, those of us connected with the project are having palpitations in anticipation.

The situation confronting the Rat is fairly straightforward. "All" he has to do is penetrate the automated defenses of a super-computer which is currently doing kinky things to the environment of the space station it controls, shut down the maddened machine and find out who programmed it to go "crackers" in the first place. Nothing to it, you say. Certainly. Except that the last half dozen gentlemen who attempted the feat before the Rat have all managed to meet unaesthetic ends in the process. In fact, Greg tells me that unless ole Slippery Jim starts turning in a better performance in play-testing, we may have to call in Angelica and the kids.

David James Ritchie

Galactic Trader

I began design work on *Galactic Trader* more than a year and a half ago, and then shelved the game to work on other projects. I've been looking through my old notes, however, and am looking forward to resuming work on the game.

I am just beginning the design of the game's systems and charts, but the intent of the design has been decided upon: *Galactic Trader* is going to be a game in which the players compete only indirectly, wrestling with the system as much as with each other, working for their own profit, rather than specifically trying to do each other in. I think this form of design is the truest way of simulating the spirit of competitive trade. After all, a trade baron's only real goal is profit for himself; knocking off his competitors is only a way to the end.

I don't mean to give the impression that the game will have the same pace when played solitaire as when played with other players, however. The players will constantly be reacting with each other, and those who are anti-social will be able to sabotage competing ships, subvert the crews of opposing players, and even engage in piracy, if they desire. The game will not focus on these aspects, however, and frequently the most profitable way for one player to interact with another will be through peaceful trade.

The core of the game will be its model of trade and the fluctuations of various markets. If possible, however, I will also include systems for such activities as selling shares in trading ventures, and engaging in financial speculations. At the very least, some form of banking system will be included.

Nick Karp

Land of Faerie

The time is 400 B.C. Camillus is dictator in Rome. Dionysius reigns in Syracuse. In the far-off port of Trapezus 6,000 weary survivors are arriving at the end of Xenophon's Anabasis. Throughout Europe a wave of Celtic invaders is on the move. Man is leaving his infancy and entering his adolescence. The transformation goes almost unmarked in Albion. There, in cool glades and atop sparkling towers, the Lords of Faerie take their leisure with no regard for the looming menace of humankind. If an Elven lord thinks of menace at all, he is likely to think only of the Fomorians of the Highlands or the Gnomish Hearthstead occupying the southwestern peninsula of his fair land. So it is in the year 2680 of the Realm. Little do these fair lords imagine in their folly that 300 years from this day they will be destroyed; Faerie will have disappeared and only the Druids will remember.

The foregoing sets forth the basis for *Land of Faerie* as the design has been developing to date. The scenario which actually makes up the game is the great Third Fomorian War between the Dark Elves of the midlands (aided by their cousins in Wales and present-day Ulster) and Imric Troll-Lord's Confederation of the North (aided by the Gnomes of Cornwall, the allied Fomorian tribes of Eastern Ireland and the growing tribes of man — the Celts, Picts and Britons). According to the game's rationale, it is this war which so weakens the Faerie Kingdoms that they are unable to resist the further encroachments of man and which leads directly to Albion becoming mundane.

The England portrayed in the game is heavily wooded and lightly settled. The midlands and Wales are the center of civilization and are dotted with Elven towns and a comparative handful of enchanted cities. Present day Scotland, part of Cornwall and a small portion of the midlands are dominated by a score of Fomorian towns, huge hollow hills (called Brochs in the game) where an entire clan will be based. The Borders, Kent, part of Devon and Somerset are the abodes of men, those poor beasts once hunted for sport who are rapidly becoming a military force to be reckoned with. A few enchanted roads and trails link the Elven communities, and the Fomorian Brochs are connected one to another only by wild Highland paths. As a protection against both Fomorians and men, the Elves have raised a chain of fortified positions linked by great dikes along their northern and southern borders, in the same way that the Romans would later raise Hadrian's Wall to protect themselves from the ravages of these same men.

Scattered about the map at such locations as Stonehenge and the Isle of Mona are Places of Power, areas of High Mana where magic is extremely powerful and which serves as openings to other dimensions. Some of these exist even in the midst of human-occupied areas (which are considered "Mundane" in the game...that is, non-magical).

The game system, itself, is a rough extrapolation of SPI's *War of the Ring* system with strength points equalling 100 men and each hex equalling 12 miles of terrain. No cards are included in the game (due to the difficulty of handling such components in a magazine game), but a paragraph system similar to that used in *Voyage of the Pandora* is used to provide some of the flavor. The design is halfway completed at this point in time and I expect to put the game in development in another three weeks.

David James Ritchie

Postal Strike Bulletin

In the event of a nationwide postal strike, you can place an order with SPI using the following toll free numbers (Mastercard or Visa): 1-800-221-8502 or 1-800-221-8503. The toll free numbers will *only* be available for customer orders if there is a postal strike. Customers in the New York metropolitan area may also use (212) 673-4103.

Our New York sales office will also be open from 9am to 6pm Monday through Friday, and 10am to 5pm Saturday. Our address is: **SPI**, 257 Park Avenue South, (between 20th and 21st streets, 3rd floor).

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FILM & TELEVISION *(continued from page 22)*

both win. Which one are you?" It is a simple statement, to be sure, but somehow one which very rarely makes it to the screen, primarily because it is too difficult for most directors to remove themselves enough to avoid interposing their own values upon the film.

For this reason alone, despite the exceptional soundtrack, excellent photography, sharp writing, directing and editing, let alone the performances of a well trained cast, it is worth the time and effort to see *Knightriders*. It is the best movie of 1981 so far.

Christopher John

CLASH OF THE TITANS

Producer: Charles H. Schneer
Co-Producer & Special Visual Effects: Ray Harryhausen
Director: Desmond Davis
Screenplay: Beverley Cross

Cast

Laurence Olivier	Zeus
Burgess Meredith	Ammon
Maggie Smith	Thetis
Ursula Andress	Aphrodite
Claire Bloom	Hera
Sian Phillips	Cassiopeia
Harry Hamlin	Perseus
Judi Bowker	Andromeda
Jack Gwillim	Poseidon
Neil McCarthy	Calibos

Long awaited with keen anticipation is Ray Harryhausen's *Clash of the Titans*. It has been a number of years since Harryhausen's last feature. His fans expected the wait; by the nature of his work, there had to be a long wait. Stop-frame animation takes a long time — especially when it is being done right.

The fans weren't particularly worried; Harryhausen is known for doing things quite right. The special effects in his films have always been among the best in the world. True, most of the films he has worked on have only been thinly veiled showcases for his special effects, but they still have their devotees. The genre press has touted the new process to be used in the film which will make the stop-frame figures and the live-action blend even more smoothly than in the past efforts. Those with too much faith are going to be disappointed.

Clash of the Titans tells the story of Perseus, one of the bastard sons of Zeus. Based on the ancient myth of Perseus and Andromeda, it is an action-filled tale of the petty and jealous Greek gods quarreling among themselves and involving the helpless humans below at their discretion. It's just the sort of thing to fill out the summer fantasy schedule, except for one small flaw: the Greek stories show little regard for the individual; human beings are only chess pieces to be moved about the board. So it is in *Clash*.

The hero, young Perseus (Harry Hamlin), seems only to be able to do one thing well: be handsome. From beginning to end, despite the words he spews, his destiny is firmly in the hands of the gods. Perseus hardly accomplishes anything on his own. He does not even enter the fight by choice; the gods take him from his easy carefree life, and transport him by magic to the action. Before he can stumble out into battle, Zeus gives him a magical sword, shield and helmut — he loses them all before the picture is over. When he is weary and cannot go on, the gods give him strength. He captures Pegasus, only to lose him. It takes a gift of the gods to bring it back. He allows this gift of the gods (a cutesy mechanical owl which makes such obvious tweets and whistles it should have been called Owl-2D-2) to be lost not once, but twice. At the picture's finale, he is not even forced to confront the dread Kraken. No; all he has to do is untie a knot that he tied earlier. Even this he can't do! The owl has to overcome his fumbling, put all the pieces in his hand, and let him try again.

All in all, it is the story of a very boring hero. It is a shame because some of Harryhausen's finest work is contained occasionally in this film. For some reason, the stop-frame models do not blend as well here as they have in the past. They are more obvious, more rubbery looking. Too often they are shown in broad daylight where they do not blend as well against the live-action footage as they have in the past. When they do work, however, they work exceedingly well. The battle with the giant scorpions is excellent. The fight with the two-headed dog is also good, as is much of the work with Pegasus and the stop-frame Calibos. But sadly, it is not enough.

Despite the addition of name stars and a better-than-usual script, *Clash of the Titans* is not good enough to stand against such competition as *Excalibur* and *Knightriders*. There is little in the way of character development or plot twists. In the end, it is just another Harryhausen picture. Still, it has its moments.

Laurence Olivier's Zeus is perfect, a versatile and powerful portrayal of a god from legend. His Zeus is blustery, pigheaded, willful, petty, vain, childish, and yet he emanates strength and awesomeness. He is Zeus; the mask never falls.

All of the film's performers do well. Burgess Meredith as the poet Ammon is outstanding. He is a near perfect picture of what we think an ancient poet and playwright should act and sound like. Maggie Smith, Claire Bloom, Judi Bowker, Jack Gwillim, and all the rest turn in more then adequate performances; they are stunning — they *are* the gods and the mortals manipulated by them.

In a way, it would be a better picture if their story had been the film's center. Like *Superman II* the movie does not pay enough attention to the important things, and too much attention to those things not worthy of import. *Clash* is not a terrible picture; it simply does not live up to what it should have been.

Clash of the Titans is still one of Harryhausen's best works. It has a decent script, a fine cast, and a lot of good effects. The problem lies in the little things. If, in truth, it was to be a clash of the titans, then that is who should have been featured; it should have been either the gods' or Perseus' story, not both. The film falls between two stools... and even Harryhausen can't save it no matter how excellent his magic. *Christopher John*

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BOOKS *(continued from page 24)*

finally, the last sorcerer confronts the last dragon for what can only be called a ten-kiloton resolution.

I found *Dragonslayer* to be a solid novel, overall. It has failings, but most of those symptomatic of novels based on scripts have well been avoided. The motivations of some of the major characters are not clearly drawn. There are segments of narrative that are too obviously little more than an awkward rendering of script directions and settings. Unfortunately, the first few pages of the novel contain the worst examples of this in a prolonged description of Cragganmore and Ulrich from a bat's perspective.

Wade through the first eight pages, however, and those failings are compensated. More than once I found myself eagerly turning the pages, anxious to learn the resolution of the well-placed minor conflicts that keep the story moving.

The most interesting characters in the Book — Princess Elspeth, the king, the village smith — are those about whom Drew says the fewest words, leaving most of the character to imagination and implication. Author Wayland Drew is at his best when he hints at histories unwritten and mechanisms undefined, expertly tantalizing and teasing the reader to speculate and conjecture.

I suspect *Dragonslayer* will be best enjoyed if you read it *before* you see the film. It is a diverting novel and enjoyable on its own merits regardless of the story's germination. The book succeeds in the first and basic requirement of any novel: it is entertaining.

David St. Marie

GAMES *[continued from page 27]*

selection is a curious mix of predominantly Greek and classical myth, with a "balro" and an "ehnt" or two. A nice touch can be found in the investment rules, which describe how powerful characters can further flesh out their character classes and sub-classes.

"...with words I can teach you to [pluck clouds from the sky and shape them with your hands]. The first of these words is imagination..."

Dillow's imagination is one of his strongest assets, as can be deduced from a quick perusal of his adventure rationales as shown in the *Adventures in High Fantasy* book. I was particularly drawn to Moorguard, which takes place in a building complex constructed about the giant skeleton of a long-dead god, and Terra Ash, a journey underneath the earth's surface to a buried temple. The dependence on single-solution conclusions as the climax of each adventure can mar the imagery evoked by the fantasy settings. That type of rigid story line often prevents the gamesmaster from doing anything but killing the player characters or dropping hints broad enough to span an Abscam defendant's credibility gap. The solo adventure provided at the end of *High Fantasy* is the best I've seen, and is recommended for any system (obviously a little conversion work will be required).

The rules style reminds one of an earnest basset hound who has finally performed a trick correctly on the hundreth time. The writer just cannot contain his enthusiasm for the system and burbles on about how easy it is to learn. We, however, note the lack of substance and discount all his claims.

High Fantasy tries to negotiate the fine line between the simple and the simplistic, but falls on the wrong side. The game should work well when played with the designer and friends, which does not help the several thousand who have not had the luck to meet Mr. Dillow. Twenty-eight or so dollars can be better invested in equivalent little Golden Books or copies of *RuneQuest* and *The Fantasy Trip*.

Eric Goldberg

Feedback Results, *Ares* 7

Rank	*Item*	*Rating*
1	Gallery	6.88
2	Rescue from the Hive (game)	6.32
3	Designer's Notes	6.29
4	Games	6.27
5	Science for Science Fiction	5.99
6	Rescue from the Hive (story)	5.96
7	Facts for Fantasy	5.89
8	House of Kurin	5.73
9	Media	5.72
10	DragonNotes	4.96
Ares 7 Overall		6.25

The Embracing *[continued from page 19]*

puncture in the fabric of his existence, had removed everything from him, had made him a threat no longer to the regime that employed Adjudicators and Stockboys and the rest — or so it was designed. His art, his friends, his lover, his *vision* had been hacked rudely away. His sight remained. Totally blind, he was enabled to see the regime for the real monsters they were, could see himself as the barbarian they had forced him to become, and could *see* that as an enemy of that regime he had ceased being a pamphleteer and so might school himself in the more ancient, essential arts of killing and survival.

Of course he could lay down and die. Defeat their purpose. Althea was somewhere in the labyrinth. That *was why three hundred and six had died so violently. He did not do it to perform for his jailors....*

He was a machine. One like him could evoke widespread terror. Ten, moving in total darkness, hearing with touch, seeing with sound, practicing their killing art, might cause enough panic to disrupt the regime's control; a hundred could topple the regime itself. Even the canine senses of the Stockboys did not allow stalking by air density, or detecting an oncoming blow by smell. Stockboys were not trained inside the labyrinth.

Tillyard awoke to the feel of a cool hand on his forehead. His body tensed like a spring and he made automatically for the knife no longer at his side. Then the pain gripped him,

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curling him up fetally, forcing a weak sound to bleed past his lips. The hand had been withdrawn; there had been no killing blow to follow its contact.

The air of the chamber was heavy with the odor of scorching meat. Tillyard fixated on it and spent several moments meditating the pain down to a less sensitive level.

The hand returned, making no hostile motions, but offering a chunk torn from the Shuffler. Steaming juices dribbled down Tillyard's arm, making the meat almost too hot to hold. He ate and swallowed quickly. Back in an almost totally dead section of his mind, he felt the absurd urge to ask for salt.

When the food hit his stomach, Tillyard's brain swam blackly and he finally vomited onto the cavern floor with such force that he lapsed back into unconsciousness. Sickness or incapacitation of any kind, he thought as he was pulled down, usually cycled back to the only end product there was in the labyrinth — death. He cursed himself for his weakness, his inability to hang on. Escaping from the Shuffler's belly had most likely depleted any reserve of luck he had stored.

But when he came back up a second time, he found himself neither eviscerated nor dead. Wildly he thought that perhaps he *had* been killed by the Shuffler, and was in a state of fugue between hells or limbos or whatever awaited him past death in the labyrinth. It was highly possible; he was sick and in shock, reeling with disorientation — until the cool hand returned as well, to tentatively stroke his forehead, leaving cool little trails through the fever-sweat that had gathered there.

Tillyard's grip on the only concept of time available to him was lost during his achingly slow recuperation. He was fed. The remains of the Shuffler would last a very long time. Time stood in stasis at three hundred and six.

There were no cooing words of promise from his benefactor; no verbal bait. Tillyard could not escape the unease that came from the lack of a palpable threat. He waited, but he never relaxed — the very concept, like salt, was absurd. He was poised on a deadly edge, he felt, unwillingly submitting to some sort of game alien to the labyrinth.

Until he touched her for the first time.

The hand was gently swabbing his brow with a scrap of hide or cloth, when, totally on impulse, Tillyard reached out and found her shoulders. She was startled, and with a gasp attempted to pull away, but he held her locked — not letting her free, yet bringing her no closer. She was smaller, more finely boned than him. His thumbs traced the line of her collarbones and distant memory slammed indecorously home in his brain. He broke the contact after only a few seconds and she retreated, not to come near him again until his belly growled from a lapsed feeding schedule.

Her.

The memory of her face and touch became sharp-edged and distinct, almost painfully clear. It never left Tillyard's mind now, and so it was only a matter of time before he took his life in his hands by speaking to her, alone for now in their dank pocket of the labyrinth.

"Come to me." It hurt to speak, as though his throat glands had modified to other purposes and would no longer permit the old way. "I can sense you're here with me."

When there was no verbal response, Tillyard felt relief. She came and crouched close, just out of reach — perhaps she was watching him.

And when he was able to walk, she led him. He did not touch her again. The picture, like a mezzotint on the inside of his skull, burned. Once again, Tillyard's mind was convincing itself, working logically toward a reality.

The creature that led him had to be Althea. But she would not speak — perhaps the best argument for her identity. The hungry tunnel dwellers always talked to him first. Their route was a new one to Tillyard, which brought his caution rushing up quite unbidden. His automatic defenses were humming, like small, terribly costly mechanics or incredibly intricate dermal implants. His natural senses were better than machines.

The pathways through which she led him were uninhabited by any of the usual occupants of the labyrinth. Occasionally he recorded non-natural metal implants in the rock walls — possibly an abandoned industrial adjunct to the maze of caverns and tunnels. Their significance was noted but lost; she led him onward. Deeper.

TILLYARD'S LEFT HAND never lost contact with the haft of the bone knife she had returned. She rushed ahead of him, apparently unaware or unconcerned about the traps that might lie before them, and Tillyard grudgingly allowed a bit of trust — she had, after all, neatly dispatched the Shuffler that had intended to lunch on him. His paranoia eased back a notch; just then the tunnel dead-ended out. She stopped.

Not quite; he registered a narrow cleft in the rock but she did not continue through it. Rather, she came to him and tugged his arm, indicating that he should precede her now. *So this is the game,* his mind nagged.

He jerked the knife free and with no hesitation whatsoever stepped through the split in the rock wall. She hung by it, not following. Waiting, it seemed.

There was no life inside. Instead, there was a gentle upward slope scattered with shale chips that had cascaded down from above. Tillyard worked his way up the incline for awhile, sniffing for trouble. His leg muscles, recently pressed back into service, stung in protest, and his back was soon lubricated with sweat. What he caught was no threat, but it stopped him short in surprise.

The air had changed, subtly. There was a greasy sheen to its odor, a tinge of metal, of solvents and moisture. He took a few more stops upward. Various carbons and a sweeter tang he did not immediately recognize. He cocked his head; there was an open space not too far up and the weighty moisture of the cave air seemed to dwindle behind him.

Tillyard's heart began to thump heavily and an icy sweat broke out over his entire body. He began trembling lightly and blew his breath out quicker to compensate. She had shown him the way out of the labyrinth; what was in front of him was topside.

But she was not behind him.

He could smell the air; air moved by breezes and carrying with it the forgotten smells of the outside world. It was like perfume, seductive, holding Tillyard in unmoving awe. He turned and picked his way with infinite care back down the slope, slipping on the shale chips and finally reaching the bottom in a noisy, ass-sliding scatter of loose rock. His scabbed legs did not seem to mind.

Beyond the cleft, she waited.

"It's the way out," he said in his hoarse, nearly useless voice. "Come with me; it's the way out!"

She moved, but not toward the cleft. Her hand traced lightly down his cheek in a caress that seemed to web his lungs in electricity; it became difficult now to breathe. She pulled him toward her.

"It *is* you," he said.

Touch me. Love me. I've been so alone.

His arms went around her and he found that one of her own was missing at the elbow. Like his severed fingers. You lost pieces of yourself in the labyrinth, and if you survived its denizens, it would consume you, absorbing your soul and being into the rock walls. It might rob you of your voice, even as it had spent endless, painstaking time robbing Tillyard of his, though he still retained that selfish remnant of speaking ability. It might rob you of other things....

"Althea." He said it only once. It was a whisper, sucked quickly into the stone walls without an echo. She held him tighter, her face now buried in the hollow of his neck. He could feel her tears running down his chest. She made no sound.

Take me. Love me.

He forced it out, tears now welling up in his own eyes; "I love you." He said it quietly, his teeth clenched together as though he was in great agony.

His eyes were squeezed tightly shut as he buried the bone knife in her back up to the hilt. She stiffened in his embrace and he could feel her blood pumping out, slicking his fist. With a gutteral rasp of air that sounded vaguely like a sigh, she slumped and he supported her. She was dead in an instant. Tillyard knew how to time the swing, how to place the blow to kill instantly and properly. He was a machine.

He laid her corpse gently down at the mouth of the cleft and spent some time squatting near her, touching her face with his calloused fingers. She had scars and battlemarks to match his own. It was her right arm that was gone. Their eyes were still good, he thought crazily. They still made tears.

He had spoken her name once in three hundred and six kills, now three hundred and seven. He could whisper that, and the other things, to himself as he climbed, the evaporating tears streaking backwards in the dust coating his face, but he did not. Smelling the air, he decided he had no further use for speaking.

The wind was very cold, and the redly setting sun reflected off Tillyard's dead eyes as he crawled, at last, out of the earth to resume his work. ■■

Feedback

Reader Survey, Ares nr. 9

Your opinions directly affect the editorial content of *Ares* Magazine. We invite you to participate in this, our regular survey of readers.

How to use the Feedback Response Card: After you've finished reading this issue of *Ares*, please read the Feedback questions below, and give us your answers by writing the answer-numbers on the card in the response boxes which correspond to each question number. See centerfold for card. Please be sure to answer all questions (but do not write anything in the box for question-numbers labelled "no question"). Incompletely filled-out cards cannot be processed.

What the numbers mean: When answering questions, "0" always means NO OPINION or NOT APPLICABLE. When the question is a "yes or no" question, "1" means YES and "2" means NO. When the question is a rating question, "1" is the WORST rating, "9" is the BEST rating, "5" is an AVERAGE rating, and all numbers in between express various shades of approval or disapproval.

1-3. No question

The following questions ask you to rate the articles in this issue on a scale of 1 (poor) through 9 (excellent); 0 = no opinion.

4. DeltaVee (game)
5. Dragonslayer Interview
6. Lasers in Space (science fact)
7. The Sword and the Stars
8. The Embracing (fiction)
9. Science for Science Fiction
10. Facts for Fantasy
11. Media (review)
12. Books (review)
13. Film and Television (review)
14. Games (review)
15. Dragon Notes
16. Designer's Notes
17. This issue overall

18. Is this issue better than the last one? 1 = Yes; 2 = No.

19. Did you send in the feedback card for your last issue of *Ares*? 1 = Yes; 2 = No.

20. Assume that you don't subscribe to *Ares*. Would the quality of this issue alone motivate you to subscribe? 1 = Yes; 2 = No.

21. For how many issues have you had a continuous subscription to *Ares*? 0 = I do not subscribe; 1 = This is my first issue; 2 = This is my second issue; 3 = This is my third issue...8 = This is my eighth or ninth issue; 9 = I am a *Lifetime Subscriber* to *Ares* (regardless of the number of issues received).

22. Your age: 1 = 13 years old or younger; 2 = 14-17; 3 = 18-21; 4 = 22-27; 5 = 28-35; 6 = 36 or older.

23. Your sex: 1 = Male; 2 = Female.

24. Education: 1 = 11 years or less; 2 = 12 years; 3 = 13-15 years; 4 = 13-15 years and still in school; 5 = 16 years; 6 = 17 years or more.

25. How long have you been playing conflict simulation games? 0 = less than a year; 1 = 1 year; 2 = 2 years...8 = 8 years; 9 = 9 or more years.

26. What is the average number of hours you spend playing simulation games each month? 0 = none; 1 = 1 hour or less; 2 = 2-5 hours; 3 = 6-9 hours; 4 = 10-15 hours; 5 = 16-20 hours; 6 = 21-25; 7 = 26-30; 8 = 31-40; 9 = 41 or more hours.

27. How many simulation games (of all publishers) do you possess? 1 = 1-10; 2 = 11-20; 3 = 21-30; 4 = 31-40; 5 = 41-50; 6 = 51-60; 7 = 61-70; 8 = 71-80; 9 = 81 or more.

28. What level of complexity do you prefer in games? Rate your preference on a 1-9 scale, with higher numbers indicating increased complexity. Use the following games as guidelines. 4 = *WorldKiller*; 7 = *BattleFleet: Mars*; 9 = *Air War*.

29. What percentage of the games you buy do you expect will be SPI games? 1 = 10%; 2 = 20%; 3 = 30%; ... 9 = 90%.

30. Pick the one area of science fiction that you most enjoy reading: 1 = Space opera/science fantasy; 2 = "hard" science fiction adventure; 3 = Problem-solving hard science fiction; 4 = Extraterrestrial societies; 5 = Future societies (utopia/dystopia); 6 = Alternate history; 7 = Time-travel; 8 = Soft science fiction (a.k.a. "new wave"); 9 = Other (please write in the category description).

31. Pick the one area about which you would most like to see science fiction games done: 1 = Strategic space conflict; 2 = Tactical space conflict (ship against ship); 3 = Strategic planet-bound conflict (army against army); 4 = Tactical planetbound conflict (man against man); 5 = Alternate history conflict; 6 = Conflict in a contemporary setting; 7 = Role-playing adventure; 8 = Economic/sociological/political conflict; 9 = Other (please write in the category description).

32. How many science fiction games do you own (including the game in this issue)? 1 = 1; 2 = 2; 3 = 3; 4 = 4; 5 = 5 to 10; 6 = 11 to 15; 7 = 16 to 20; 8 = 21 to 25; 9 = 26 or more.

33. Pick the one area of fantasy that you most enjoy reading: 1 = Sword and Sorcery; 2 = Mythological fantasy; 3 = Quest adventure; 4 = Classically-based fantasy (e.g., Arthurian legend); 5 = Fantasy in a contemporary setting; 5 = Superhero/heroic adventure; 7 = Anthropomorphic fantasy (e.g., *Watership Down*); 8 = Horror/occult; 9 = Other (please write in the category description).

34. Pick the one area about which you would most like to see fantasy games done: 1 = Strategic sword and sorcery boardgames (army against army); 2 = Tactical sword and sorcery boardgames (hero against evildoer); 3 = Quest/adventure boardgames; 4 = Sword and sorcery role-playing; 5 = Quest/adventure role-playing; 6 = Classically-based fantasy; 7 = Anthropomorphic societies; 8 = Horror/occult; 9 = Other (please write in the category description).

35. How many fantasy games do you own? 1 = 1; 2 = 2; 3 = 3; 4 = 4; 5 = 5 to 10; 6 = 11 to 15; 7 = 16 to 20; 8 = 21 to 25; 9 = 26 or more.

36. If you are a subscriber to *Ares*, indicate how you came to be one: 1 = An ad in *Strategy & Tactics*; 2 = An ad in *Analog*; 3 = An ad in *Games*; 4 = An ad in a previous issue of *Ares*; 5 = An ad in a sf/f gaming magazine; 6 = An ad in a science fiction magazine; 7 = An ad in a science fact magazine; 8 = An ad in another kind of magazine not mentioned; 9 = Other (please specify on the Feedback card).

37. Indicate on 1 to 9 fantasy-to-science-fiction spectrum where your interest lies. For example, if you're only interested in fantasy games and stories, you'd write "1"; if your interest were mainly fantasy but included some sf, you might write "2" or "3"; evenly divided interest would be "5"; and, of course, pure sf interest would rate a "9".

38. How many persons, including yourself, will read this copy of *Ares*? 1 = 1; 2 = 2...8 = 8; 9 = 9 or more.

Please rate the following games on a 1 to 9 scale, with "1" indicating a particularly strong dislike for a game and "9" an especially favorable opinion.* Please rate only those games which you have played (against an opponent or solitaire) at least once in the last twelve months. If you have not played in the last twelve months, please do not rate it (respond "0" in the space).** ***All games listed are SPI published, unless otherwise specified.

39. Rescue from the Hive
40. Ragnarok
41. Dawn of the Dead
42. Sword and the Stars
43. The Lords of Underearth (MGC)
44. Dimension Demons (MGC)
45. Death Test II (MGC)
46. Grail Quest (MGC)
47. Security Station (MGC)
48. Mage (Archaeron Game System)
49. Bright Face/Mission on Mithril (GDW)
50. Starfire II (TFG)
51. The Compleat Fantasist (Dimension 6)
52. Land of the Rising Sun (FGU)
53. Bushido (Phoenix Games)
54. Amoeba Wars (AH)
55. Divine Right (TSR)
56. Traveller (GDW)
57. The Beastlord (YP)
58. Starfall (YP)
59. Melee (GDW)
60. Cosmic Encounters (EP)
61. Magic Realm (AH)
62. Dune (AH)
63. Ogre (MGW)
64. War of the Ring
65. Creature That Ate Sheboygan

66. Rate how important solitaire playability in *Ares* games is to you when you consider re-subscribing to the magazine; use a 1 to 9 scale, with 1 indicating solitaire playability is *not* a major factor and 9 indicating it is a major factor.

Questions 67 through 71 are to be answered with a 0 to 9 response indicating the percentage of time or money spent on a given activity. 0 = none or almost none; 1 = 10%; 2 = 20%; 3 = 30%...9 = 90% or more.

67. What percentage of your total game-playing time is spent on science fiction role-playing games?

68. What percentage of your total game-playing time is spent on fantasy role-playing games?

69. What percentage of your total game-playing time is spent on non-role-playing fantasy or science fiction games?

70. What percentage of the time you spend playing science fiction role-playing games do you spend playing GDW's *Traveller*?

71. What percentage of the time you spend playing science fiction role-playing games do you spend playing FGU's *Space Opera*?

Questions 72 through 78 concern* DeltaVee *as a stand-alone game and as part of the* Universe *science fiction role-playing system. Answer the questions using a 1 to 9 scale, with 1 indicating a strong disagreement with the statement and a 9 indicating a strong agreement with the statement; 0 = no opinion.

72. *DeltaVee* works well as a complete, stand-alone tactical space combat game.

73. *DeltaVee* is a better tactical space combat system than Task Force Game's *Star Fleet Battles*.

74. *DeltaVee* is a better tactical space combat system than SPI's *Vector 3*.

75. *DeltaVee* is a better tactical space combat system than OSG's *Star Quest*.

76. *DeltaVee* could replace *Mayday* as the tactical combat system in GDW's *Traveller*.

77. *DeltaVee* could replace the tactical combat system used in FGU's *Space Opera*.

78. Having played *DeltaVee* makes me want to own the complete *Universe* game.

Rate the following game proposals on a scale of 1 to 9, with 1 indicating very little inclination to buy the game if published up through 9 indicating a definite intention to purchase.

79. The Mythfits. Sorcerer apprentice Skeeve and demon Aahz are in the thick of things again. The crazy dynamic duo from the books of Robert Asprin are being chased through the dimensions by unfriendly armies led by their original enemy, the wizard Isstvan. As they jump around — visiting the Bazaar at Deva, being bored to death on Klad, dropping in on the Gnomes of Zoorik — they must collect enough allies to beat Isstvan (or, at least, throw him off their track for a time). *The Mythfits* is a two-player game of wild fantasy. The game would include a 22" × 34" mapsheet that contains tactical displays of houses, streets, and battlefields where magical or military confrontations occur, as well as the mutli-dimension display. All the madcap characters from Asprin's novels — the lovely Tanda, the dragon Gleep, the Imps Higgens and Brockhurst, and all the rest — will appear in the game. Will include 200 counters, rules (possibly using an adapted *Voyage of the Pandora* story-paragraph system), and playing aids. To sell for $15, available subject to agreement with Mr. Asprin.

80. Fantasy Flux. By the mid-21st Century, the human brain-computer interface is commonplace. Plug yourself in to any computer, input your identity number, and you

immediately have access to a worldwide computer network. The favorite pastime of people is *Fantasy Flux* – the ultimate role-playing adventure system. The computer controls each player's senses, actually giving them the feeling that they are exploring a magical castle or fighting a terrible dragon. In one group of players, however, there is a malevolent spirit present; these players are suddenly caught up in a nightmare of shifting fantasy scenes and grisly murders. Unless the guilty party (human, computer, or out-of-control simulation) is discovered, the whole group of players may meet its untimely end. *Fantasy Flux* would adapt the *TimeTripper* game system; as the party is sent from one fantasy setting to another, they must confront possible allies or enemies on a tactical display. The *Voyage of the Pandora* story-paragraph system would also be incorporated to help players solve the mystery of who the murderer (if any) is. *Fantasy Flux* would contain a 17" × 22" map, 200 counters, rules booklet and other playing aids. To sell for $12.

81. Laser Pilot. The red alert has been sounded. Long-range sensors indicate the alien fleet is closing quickly on the terrestrial task force. The human pilots take their places and quickly connect the computer-brain interface. Then squad after squad blasts off to intercept the enemy. The battle takes place within the wink of an eye – at near-light speeds the two fleets pass each other and pilots have only microseconds to react and fight! Shrapnel bomblets must be scattered, the laser-burst battery must be aimed at where the enemy is expected to pass, and evasive maneuvers must be undertaken. The game would contain four 8½" × 11" sheets; two would be tactical combat displays (one per player) and two would represent the panels of the ship's interior. There would be 100 cardboard markers used to keep track of a ship's instrument readings and its position on the tactical display. Extensive rules would cover computer interphase, time dilation effects, weaponry, plotting the enemy's flight path, and fuel and energy consumptions. A possible *Ares* game to sell for $10.

82. Invasion America II. A second edition of SPI's popular *Invasion America* game which would concentrate on cleaning up rules problems (the oddities of the airpower rules, for example), adding new scenarios and rebalancing existing scenarios (especialy the campaign). The revised package would include a new 32-page rules booklet, two 22" × 34" mapsheets, and 600 counters (the existing 400 counters plus 200 more for use in new scenarios). *Invasion America II* would sell boxed with tray for $18.

83. Invasion America Quadrigame. Four battles from the future war for the North American continent. *IAQ* would simulate each battle at the battalion/regimental level using a derivation of our *Fulda Gap* system for the Standard Rules which would be common to all four games in the package. Possible titles would be chosen from among: *The Battle of Three Rivers*, portraying the surprise winter counterattack of the American Third Army against the ESC forces occupying the strategic riverport of Pittsburgh during the second year of the North American Campaign; *Drive on Reno*, the PAL Rocky Mountain Front's fatal autumn campaign in Nevada and the ensuing US-Canadian counterattack which cost the PAL 150,000 men and ended the threat to the northern plains; *Rio Grande*, the SAU Second Army Group's invasion of Southwest Texas runs head-on into General Fiske's reinforced Eighth Army in one of the largest tank battles of the war; *Thunder on the Mississippi*, the abortive attempt to rescue the surrounded US VI and XVII Corps from the Vicksburg Pocket; *Operation Autumn Wind*, the ESC march down the St. Lawrence results in the capture of Montreal despite the valiant efforts of the Canadian First Army supported by elements of the New York National Guard; *March on Atlanta*, combined ESC and SAU forces are stopped within miles of the city by two corps of the US Ninth Army aided by Georgia and South Carolina militia. The game would included four 22" × 17" maps, 800 counters and 32 pages of Standard and Exclusive Rules. Available boxed for $20-25.

84. Ophiuchi Rush. The Terran Trade Commission has opened the Ophiuchi star-system for commercial exploitation. Four independent development companies send scout teams to report on the five planets in the system which show the most promise for economic development. Soon the companies are struggling to establish bases on the planets in order to discover, gather and export the available resources. *Ophiuchi Rush* would be a colorful 2 to 4 player simulation of the exploration and commercialization of a star system. Each player would control one company and its exploration ships, intrepid pioneers, scientists and contract goons, building and manufacturing supplies and a bank of capital with which to purchase unexpected necessities (weapons, spies, saboteurs, etc.). The game would include a 22" × 34" map of the system (including planetary sub-displays), 200 counters representing agents, settlements, installations and ships, and 16 pages of rules and paragraphs for use in randomly generating the planets of the system anew each game. *Ophiuchi Rush* would sell boxed for $12. A possible *Ares* game.

85. Way of the Horseclans. In post-holocaust America, there is only one law... that which a man wears suspended from a baldric. The long centuries since the blossoming of the angry mushroom clouds have been filled with savagery and out of those dark times have ridden... the Horseclans. Worshipping only sun and wind, blessed with strange telepathic abilities and led by the mysterious Milo, the Undying, the clansmen have easily overrun an entire continent. Now, they must find a way to hold it. *Way of the Horseclans* would be closed-system fantasy role-playing game based on Robert Adams' popular series of novels on the America of the future. Characters would be leading members of the various clans – poor, but honest freefighters – Eloheen conspirators or, possibly, members of Milo's small circle of immortals. Against the backdrop of Adams' world, characters would participate in campaigns, plots and missions designed to further the purposes of the political faction they serve. Poor performance may result in an ignominous death. Exceptional competence or heroism results in advancement, honors (including the coveted Award of the Silver Cat) and, sometimes, a glorious death, according to the precepts of sun and wind. Availability would be contingent upon an agreement with Mr. Adams. The game would include a 22" × 34" plotting map of post-holocaust America, 144+ pages of rules, adventures and support material (in three booklets) and one or more plastic dice. Boxed for $15-18.

86. The Chronicles of Thomas Covenant. Based on the trilogy of the same name by Stephen R. Donaldson, this game would use a variation of the *War of the Ring* game system to portray the battle between Covenant, defender of the Land, and Lord Foul, its potential destroyer. The objective of Foul would be to capture the "white gold" which is both source and symbol of Covenant's power to use "wild magic" and to use the ring to control and, ultimately, destroy the Land. Foul would be aided by a variety of characters taken from the book and portrayed in the game via character cards. These would include the Ravers, among others. Supporting Foul and his leading henchmen would be armies of Urviles and their kin, portrayed as strength points. Covenant would command the reluctant support of the Bloodguard, the Lords of Revelstone and others (though Covenant's supporters would be backprinted with a turncoat side to indicate the possibility of them being suborned by Foul). The focus of the game, however, would be upon the wild magic, which would appear only in moments of intense danger. Appearance of the wild magic would thus be keyed to certain game events or results on a Combat Results Table and the actual manner in which the wild magic was applied would be determined randomly (by a card pick, for example) to represent Covenant's lack of control over his own powers. The game would include a 22" × 34" map of the Land, 400+ counters, 100 cards or tiles representing major characters, random events, search patterns and the effects of wild magic, and 32 pages of rules and background material. Availability would be subject to agreement with the author. To sell for $18.

87. Horror Hotel. Every hotel has its ghosts. Nothing strange about that. But when a party of tourists is snowed in over a long weekend at the Mountainview, they soon find that their turn-of-the-century accommodations harbor more than their fair share of ghoulies and ghosties and things that go bump in the night. More importantly, the guests soon come to realize that the Mountainview, itself, is controlling the actions of its spectral inhabitants, that the very hotel is evil and that it wants them to join its menagerie of horror... forever. *Horror Hotel* would place from one to a dozen players (each controlling one or more stock "victims") inside the Mountainview for that long weekend. The hotel would place in the character's paths randomly generated horrors (from a ghostly cocktail party to a self-closing walk-in freezer that is hungry for human occupants to the spine-chilling guest in room 313) a la *Voyage of the Pandora*, but the physical hotel, itself, would be generated in part using the *DeathMaze* system of chits. The players' objective would be to survive their stay and drive out the evil which inhabits the Mountainview, an evil which first must be faced before a method of destruction can be devised. *Horror Hotel* would include 200 die-cut counters, a 22" × 34" map of the three-story hotel (plus basement and attic) and 16 pages of rules. A possible *Ares* game to sell for $12.

88. Universal Hardware. A *Universe* supplement expanding the existing equipment lists and adding new skills, fields of study, and professions. The additional equipment would be more exotic and specialized and includes weapons, scanners, computers, communicators, recorders, translators, etc. Vehicles detailed would include more ground, air, and marine vessels and describe specialized military and scientific craft. The new skills would include Anthropology, Social Science, Cultural Develop5 ent, Psychology, Psycohistory, Religion, Political Science, Administration, and The Arts. An additional field of study called Cultural Studies would be added which would yield such professions as Politician, Artist, Missionary, Xenologist, and Cosmologist. This would be a 32-page supplement for $6.00

89. Spacestations and Orbital Craft. A *Universe* supplement detailing all equipment and material necessary to design and referee all manner of orbital structures. Detailed plans of a spaceport would be included, covering all areas of interest to characters and GM's. Information included would explain standard spaceport procedure, customs inspections, and federal administration. Other types of spacestations would be given, such as industrial and scientific stations. General examples would be included with explanations of how the GM could construct his own. Also described would be typical NPC's which the characters might encounter in a typical spaceport. A 32-page supplement selling for $6.00.

90. The Harmonics Catalog. A *Universe* supplement detailing all the spaceships in the harmonics line. An art-intensive supplement, it would include renderings and plans for all existing ships and pods along with many new ship designs. Information concerning ship support and repair craft would also be included. All floor plans would be fully compatable with the *Universe* character combat system. Guidelines would be given to aid the GM with the creation of ships of his own design. A 32-page supplement selling for $8.00

91. Hirelings. A *DragonQuest* accessory consisting of completed Character Records for almost 200 assassins, thieves, bravos, cutpurses, hireswords and others representing all of the skill classes available in *DragonQuest*. A simple numbering system keyed to rolls of D10, D20 and D100 would be used to randomly select hirelings available from local Guilds or met in taverns. *Hirelings* would consist of a deck of 200 5" × 7" cards and would sell for $8.

92. The Residents of Alusia. A *DragonQuest* supplement giving GM's a detailed description of approximately 50 NPC's with which to populate either Alusia or a world of their own. These 50 would be given family histories and any interrelationships would be explained. Amongst these residents all Skills, Spells and Colleges would be represented in varying Rank so player characters could use them as sources of knowledge and teachers. Some of the more well known NPC's would appear in illustrated form so the GM could show the players a picture of the person they just met. All of the details would be consistent with any adventures already placed on the Alusia maps and thus be easily integrated into that world. Any other world of the GM's creation would benefit from these NPC's as they could be adapted with little modification. If space allowed also included would be a system for quick NPC generation during an adventure situation. A 32-page booklet selling for $6-8.

93. Tales and Legends of Alusia. The most extensive book of adventures ever attempted. More than a simple throwaway collection of "quickie" dungeons, *Tales and Legends of Alusia* would feature half a dozen full-scale, multi-session adventures (*Palace of Ontroncle*-sized) by the leading names in fantasy role-playing. In addition, *Tales and Legends of Alusia* would also contain a dozen smaller (*House of Kunin*-sized or larger) adventures all of which would be interrelated. Taken together, the 18 adventures would form an extensive body of background literature on the continent of Alusia in addition to being enjoyable adventures in and of themselves. Space permitting, *Tales and Legends of Alusia* would also include a background essay tying the separate adventures-cum-stories together. One 196-page hard-bound book for $12-15.

94-96. No questions.

DragonNotes A Regular Feature for DragonQuest Players

by David Ritchie

Directions

By the time this issue of *Ares* appears *DragonQuest* will be one year old. During that year, we have exhausted two full printings of the game (which has been out of stock twice when demand outstripped supply to an unprecedented extent), all but sold out our first two adventures and our GM screen, and taken the first steps toward establishing what we hope will be a world-wide network of *DragonQuest* players. It's been a good, if harrowing, year. We didn't do all we set out to do, but then we set some pretty high goals. Having somehow staggered and stumbled through one year of unexpected successes, the *DragonQuest* team is now taking stock in preparation for what we hope will be an even better second year.

As of this writing, the press sheets of *Frontiers of Alusia* are in and have been exciting considerable comment. Unlike most adventure maps, *FOA* includes a wide variety of realistic terrain (rapids, waterfalls, reefs and shoals, beaches, plains, fields, hills, wooded hills, woods, forests, brushlands, mountains, cliffs, escarpments, deserts, oases, islands, towns, castles, trails, roads, ruins, swamps, rivers, lakes, etc.) plus High and Low Mana areas and a rich overlay of place names evocative of the local myths and legends (which are explained in the accompanying *Travel Guide*). *FOA* should be shipping within a couple of weeks of this issue.

Next out of the starting gate will be Steve Jackson's *World Generation* supplement. I have now gotten to see about a third of this work and I remain unabashedly convinced that Steve is one of the best designers in our hobby. Though much of the material of necessity relates directly to *DragonQuest*, the chapters on creating and mapping a physical world are usable with any FRP system and are the clearest and most complete such rules I have yet seen. There are also a lot of fun ideas wrapped up in these sections. I especially like the way Mana levels affect Fantastical Creatures (stunting them or robbing them of powers in Low Mana areas and causing some monsters and NPC's to *gain* unexpected magical powers in High Mana areas) and the presence of Magical Weather in the rules (rains of fire and the like). Among the sections which I have not seen are those dealing with religion, collective magic and the creation of political structures, all of which should be arriving in the next few weeks. We are still straining bone and sinew to get this product out by GENCON.

Paul Jaquays reports that he is manfully struggling with *The Enchanted Wood* and expects to have it done early in May, at which time we will be sending copies off to GM's around the country for testing, advice and preparation for this summer's round of conventions. No publication date has yet been set on this one, though I expect to see it on the shelves for Christmas.

Finally, we have reluctantly decided to cancel the planned publication of *Arcane Wisdom* and *Advanced Monsters* as separate supplements. After going over the numbers, the marketing committee came to the decision that the price we would have to charge for these items as separate products was far too high and that the work already done would serve as the basis for a single larger product. What we have tentatively titled *DragonQuest Level II* is a sort of advanced *DragonQuest* which expands upon the existing game, offering additional magic, skills and monsters, optional characteristics, more on High Holidays, some adventure elements we didn't have space for in the original and a variety of smaller features which serve to make *DragonQuest* into an even richer game. Happily, the *DragonQuest* team has been increased by the addition of Gerry Klug to the SPI staff and by the return of Nick (*Blade of Allectus*) Karp to the fold in June. With their help, we should be in a position to finish *DragonQuest Level II* in time for a January release.

Other *DragonQuest* products await the will of the feedback or are being held in reserve until the necessary prerequisites are in print. These include the remaining maps in the *Alusia* series, the *Randomized Dungeon Kit*, a sample city (pre-generated and "pre-stocked") and a couple of mini-adventures.

Questions and Answers

Ray Price asks: When a person is randomly determining the characteristics of a monster, should he randomly determine the values for all the characteristics or should he use the tables in Character Generation to determine Secondary Characteristics?

Good Point. The spans of numbers given for monsters and NPC's in the rules on Monsters are the operative numbers in this case.

The procedures for determining Secondary Characteristics in IV are used exclusively for generating *Player Characters*. NPC's will usually have a narrower range of possible characteristics attached to them specifically so that the characters generated will be plausible even if the most extreme numbers within the ranges given are chosen.

Ray also points out a contradiction in Section 30 (Book II, Page 6) where we say that the *casting character* rolls D100 to determine backfire results. Elsewhere we say that the GM performs this function. Obviously, only the GM can perform this function and that is the way the game was designed to be played. The section referred to should be amended by players to reflect this fact. Our apologies for this potentially serious glitch.

One of the ideas we toyed with which never made it into the finished *DragonQuest* rules was having PS affect damage in Physical Combat. For those of you who want yet more detail in the combat system (at the expense of additional record- keeping), we suggest the following. Any feedback would be greatly appreciated.

(19.9) Whenever a character makes a Strike attempt in Close or Melee Combat with a weapon doing Class B or C damage or with a Garotte or Shield or whenever the Thug's Scarf is used in Close Combat, the chance of breaking or dropping the weapon will be modified as per the following chart:

PS REQUIRED	CHARACTER'S PS	DAMAGE	DROP/BREAK
9-10	12-15	+1	99-100
9-10	16-18	+2	96-100
9-10	19-21	+3	92-100
9-10	22+	+4	88-100
11-12	16-20	+1	99-100
11-12	21-24	+2	96-100
11-12	25-28	+3	92-100
11-12	29+	+4	87-100
13-14	20-24	+2	99-100
13-14	25-28	+3	96-100
13-14	29+	+5	92-100
15-17	25-28	+3	99-100
15-17	29-32	+5	96-100
15-17	33+	+6	92-100
18-20	27-30	+3	99-100
18-20	31-35	+5	96-100
18-20	36+	+7	92-100
21-25	35-40	+4	99-100
21-25	41-45	+7	96-100
21-25	46+	+9	92-100
26+	50+	+6	99-100

Key: PS Required = The minimum PS required to use a weapon effectively. **Character's PS** = The PS of the character using the weapon. **Damage** = A number added to the Damage die roll *in addition to any other modifications* to determine the damage inflicted on a target when the weapon is used by a character with that PS. **Drop/Break** = The numbers on which the character will drop or break the weapon as a function of a Strike Check.

Special Note: Strength should generally not impact upon Ranged Combat except in a minor way. GM's who wish to portray the effect of PS in this area should increase *Range* by 1% per point of PS above the minimum necessary to employ the weapon and should increase the chance of breakage by an amount similar to that shown on the chart above. Damage should as a rule not be increased. ■■

Frontiers of Alusia
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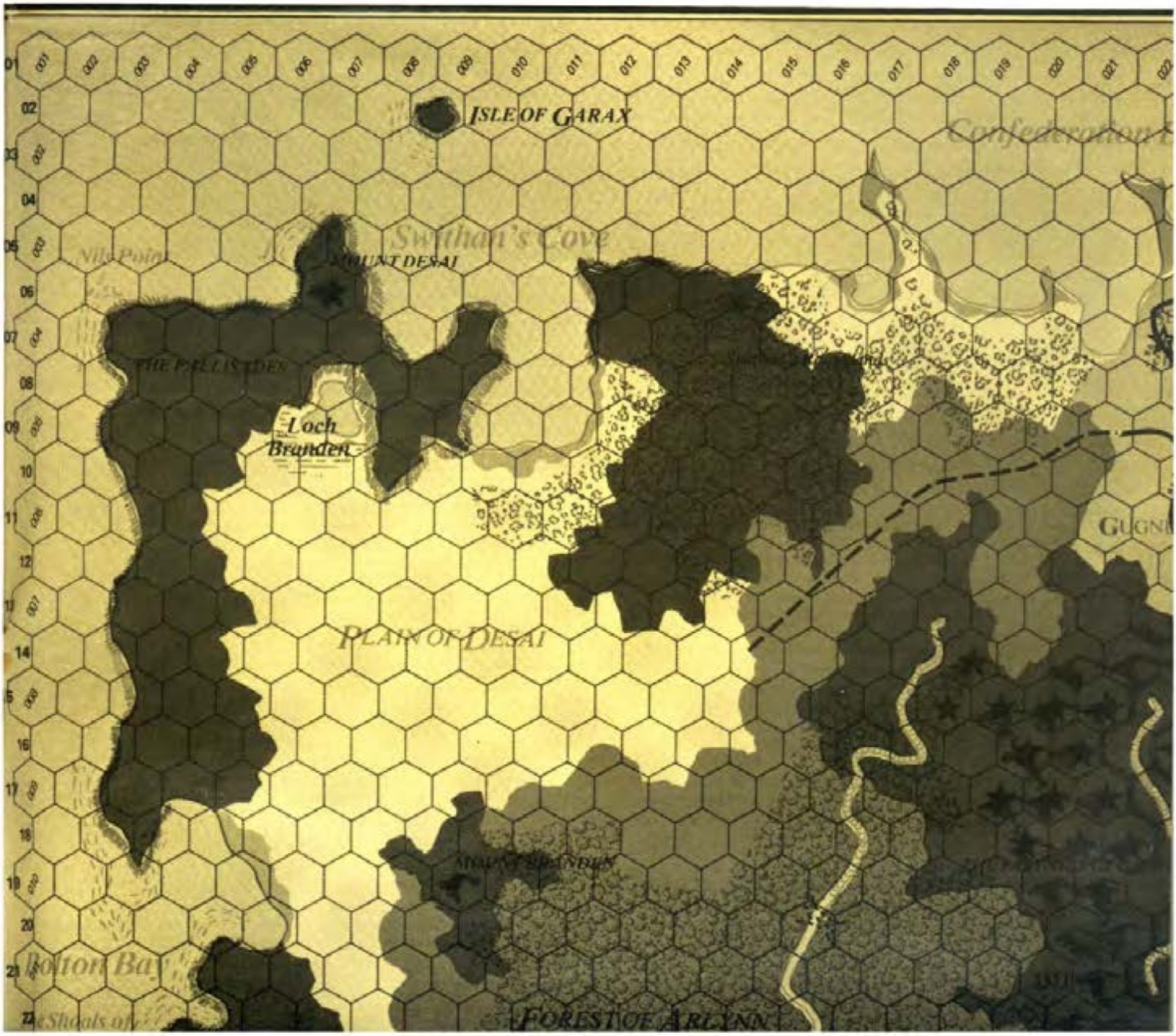

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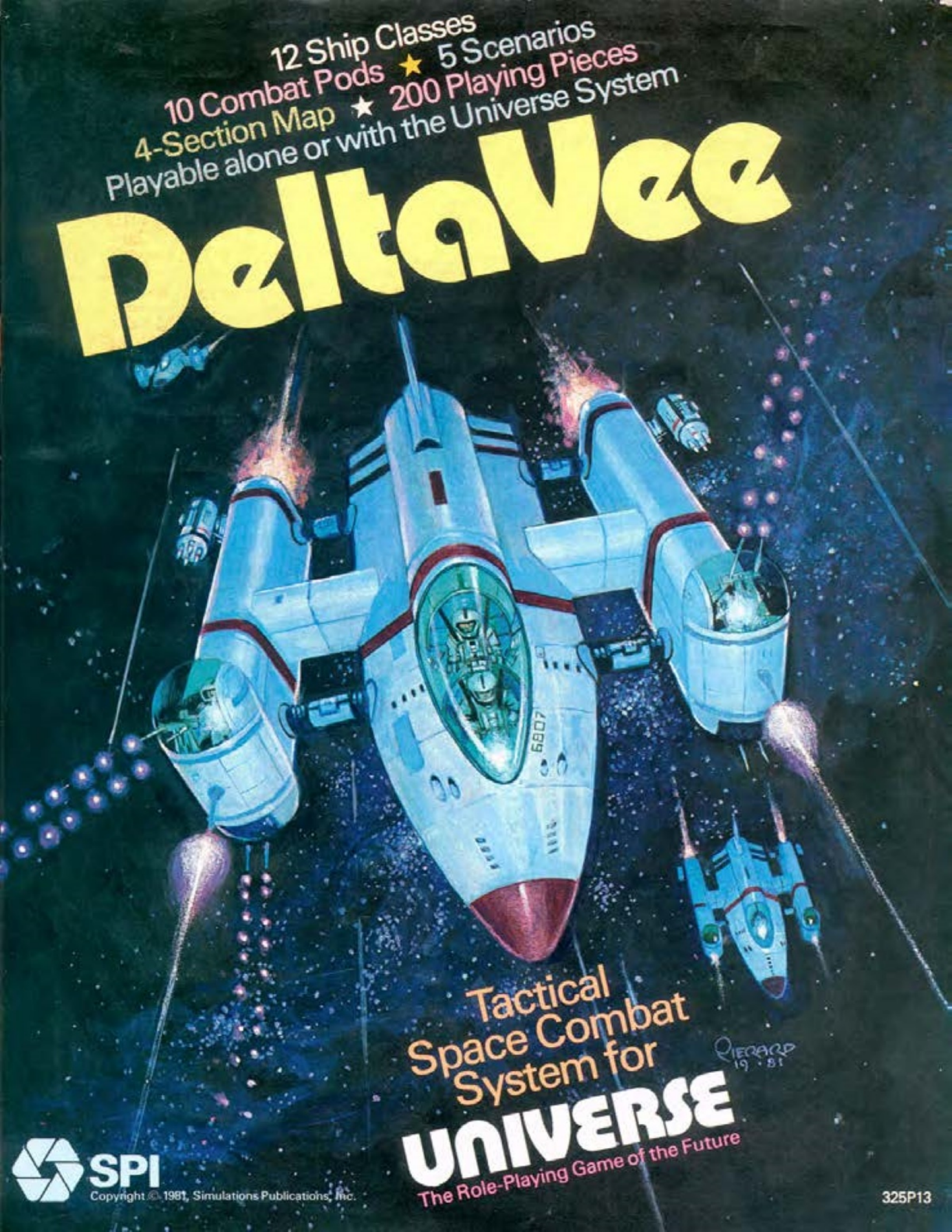
DeltaVee



Tactical Space Combat System for

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Read This First

The rules to *Delta Vee* are organized by major topics arranged in the order in which they occur in the play of the game. Each such major topic is given a number and a name below which is given (usually) a General rule or Description which summarizes the rule in that section. This is usually followed by numbered paragraphs called Cases, which give the specifics of the rules. Note that the numbering of the Cases is a decimal form of the major Section number. Players should examine the map and counters and then quickly read the rules (without trying to memorize them). Then the game should be set up to play and a "trial run" made.

Rules Questions

Should you have any difficulty interpreting the rules, please write to SPI, phrasing your questions so that they can be answered by a simple sentence, word, or number. You must enclose a stamped, self-addressed envelope. We cannot guarantee a proper answer should you choose to phone in your question (the right person is not always available — and since SPI has published hundreds of games, no one individual is capable of answering all questions). Write to:

SPI
Rules Questions Editor for Delta Vee
257 Park Avenue South
New York, NY 10010

1.0 **Introduction**
2.0 **Game Components**
3.0 **Sequence of Play**
4.0 **Spaceships**
5.0 **Pods**
6.0 **Movement and Direction**
7.0 **Commands**
8.0 **Laser and Particle Fire**
9.0 **Missile Launch and Interception**
10.0 **How to Use the Spaceship Logs**
11.0 **Scenarios**

[1.0] Introduction

DeltaVee is a tactical simulation of combat among spaceships in the 24th Century. The game is intended for two players, although more may participate in scenarios devised by the players. Each hex on the *DeltaVee* game maps represents a volume 20,000 kilometers in diameter. The game uses a two-dimensional movement system; the "plane" of the playing area represents the ecliptic of the star system in which each battle occurs. Each Game-Turn represents 15 minutes.

During play, each player moves one or more spaceships about the game-map using a maneuver system that abstractly simulates the laws of Newtonian motion. Each spaceship is composed of a hull with a varying number of attached pods. Each pod represents a system that improves the ship's capabilities in combat, movement, and/or some other aspect of spaceship operations.

Each player controls his spaceships by issuing Maneuver Commands (so that the ship may alter its velocity or direction of movement) and Battle Commands (so that weapons and other systems aboard the ship may be prepared for use). A spaceship's combat abilities include laser fire, particle fire, four types of missiles, and battlecraft (two-man fighter craft launched from larger ships). The attributes of each spaceship are recorded on a Spaceship Log before beginning play. During the game, energy expended, missiles launched, and damage incurred by the ship are recorded on the ship's log.

DeltaVee is the tactical space combat system for SPI's science fiction role-playing game, *Universe*. Although there is little open warfare in the vast human interstellar empire of the 24th Century (contact with another space-faring race has yet to be established), there are many types of illegal ship traffic and disputes among self-governing worlds. These types of small conflicts form the background for the scenarios in *DeltaVee*. Interstellar travel in *Universe* is accomplished by hyperjumping with the aid of a psionic navigator. In *DeltaVee*, hyperjumping is very rare, since all its battles occur within the confines of a star system, where hyperjumping is impossible.

Note: One 20-sided die is necessary for playing *DeltaVee*. When using the die, always treat a result of **0** as **10**.

[2.0] Game Components

GENERAL RULE:

The game components consist of these rules, including charts, tables, and logs; four identical game maps; and 200 playing pieces. One 20-sided die and pencils with erasers are also required in order to play the game.

CASES:

[2.1] The perforated game mapsheet is separated into four game maps which are placed end-to-end or side-to-side to form the playing area.

All maps are identical, and each consists of a hexagonal grid to regularize the positions and movement of the playing pieces. Each hexagon ("hex") on each map has its own four-digit identity number. The set-up instructions for each scenario describe how many maps are initially used and how they are placed in relation to each other. Each map used at the start of a scenario is assigned a letter (A through D), to aid in deploying the playing pieces. Once play begins, additional maps may be added to the playing area or maps may be moved to accommodate the movement of the playing pieces (see 6.2).

[2.2] The charts and tables are used to summarize and resolve certain game functions.

These charts and tables include the Spaceship Attribute Chart, Pod Attribute Chart, Command Summary, Relative Velocity Chart, Fire Results Table, Hit Table, Missile Attribute Chart, and Missile Interception Table.

[2.3] Players use the Spaceship Logs to record the status of their spaceships, battlecraft, and missiles during the course of play.

Each player uses one Spaceship Log for each of his spaceships in play. There are two types of Spaceship Logs. Type 1 is used for small ships, and Type 2 is used for large ships. The log used for a particular spaceship is stated in the scenario instructions. Photocopies of the Spaceship Logs must be made for repeated play.

[2.4] The playing pieces represent the spaceships, battlecraft, and missiles that may be used by the players.

The game also includes Velocity markers, Planet markers, Asteroid Field markers, and other game markers.

[2.5] The spaceships, battlecraft, and missiles are assigned to the players by the scenario instructions.

These three types of counters are collectively called **units**.

SAMPLE SPACESHIP COUNTER

All spaceship counters are identical, except for an identifying letter. The specific attributes of each spaceship are detailed in the scenario instructions, the Spaceship Attribute Chart, and the Pod Attribute Chart. The status of each spaceship during play is recorded on its Spaceship Log. The arrowhead on each spaceship counter indicates the direction in which the spaceship is moving. Each spaceship counter must have a Velocity marker under it at all times. The back of each spaceship counter is used when the spaceship's force field is active (see 7.4).

SAMPLE BATTLECRAFT COUNTER

A battlecraft is a small, manned fighter spacecraft that can be launched from a spaceship. All battlecraft counters are identical, except for a letter-number that identifies each battlecraft with the spaceship to which it belongs. For example, battlecraft **A1** is the first battlecraft of spaceship **A**. The attributes of each battlecraft are detailed on the Spaceship Attribute Chart. The status of each battlecraft during play is recorded on the appropriate Spaceship Log. Once a battlecraft has been launched, a Velocity marker must be under it at all times. Until detected, a battlecraft is kept face-down. The owning player may always inspect his unrevealed battlecraft; the enemy player may not.

A missile is a self-propelled warhead that may be launched from a spaceship with the requisite capabilities. There are four types of missiles: *unguided*, *guided*, *intelligent*, and *MIMS* (Multi-Intelligent Missile System). All missile counters of a single type are identical except for an identity number (each guided missile has a letter-number that identifies it with the spaceship from which it is launched). The attributes of each missile are detailed on the Missile Attribute Chart and explanations follow. The

status of a launched missile is recorded on the appropriate Spaceship Log. Once a missile has been launched, a Velocity marker must be kept under it until the missile explodes or is moved off the playing area. The back of each missile counter is kept face-up until the missile is detected by the enemy player.

Front *Back*

Unguided Missile. Once launched, an unguided missile may receive no Maneuver Commands. Its velocity is automatically increased by one each friendly Command Phase.

Guided Missile. A launched guided missile may be issued Maneuver Commands during each Command Phase in which the ship it was launched from is issued a Command to control that particular guided missile.

Intelligent Missile. An intelligent missile may be issued Maneuver Commands during each friendly Command Phase.

MIMS. A MIMS is identical to an intelligent missile except that it may launch four unguided missiles itself during any one friendly Fire Phase (see 9.9). After doing so, it is considered an intelligent missile.

[2.6] **A Velocity marker is placed under each unit in play to show its current velocity.**

SAMPLE VELOCITY MARKER

Front *Back*

The values of the Velocity markers range from **0** to **9** and are presented in five denominations. The players place and adjust the Velocity markers under their units to show each unit's current velocity. No more than one Velocity marker is placed under a single unit at a time. A missile or battlecraft that has been *prepared* is not assigned a Velocity marker until launched. Both players may always inspect the Velocity markers under all enemy and friendly units.

[2.7] **The game markers are used on the game maps and the Spaceship Logs to show the status of various units.**

Planet. Placed on the game map in accordance with certain scenarios. Spaceships may sometimes land on a planet or use its gravity well to alter the ship's velocity (see 6.5).

Asteroid Field. Placed on the game map in accordance with certain scenarios. An asteroid field presents a hazard to any units entering the hex (see 6.6).

Front *Back*

Energy Units. Used on the Energy Unit Track of each Spaceship Log to record the expenditure of the ship's Energy Units during play (see 10.3).

Prepare Jump/Jump. Placed atop a spaceship that has been issued a Prepare Jump or Jump Command (see 7.2).

Direction Reminder. Placed adjacent to a unit that has completed a zig-zag move in the hex that the unit would enter next while maintaining its intended direction (see 6.1).

Randomizer Chits. A 20-sided die is required to play *DeltaVee*. If one is not available, these 10 chits can be placed in an opaque, wide-mouthed container (such as a coffee mug). Whenever a roll of the die is called for, blindly draw a chit to obtain a die result. Always return a drawn chit to the container after noting its result, so that all 10 chits are always available to be drawn from.

[3.0] Sequence of Play

DeltaVee is played in *Game-Turns*. Each Game-Turn is divided into six distinct *Phases*, three for each player. The player whose Phase is in progress is called the *Phasing player*. All actions undertaken by the players in a Game-Turn must proceed strictly according to the following sequence outline:

1. FIRST PLAYER MOVEMENT PHASE

The first player (as assigned by the scenario instructions) must move all his spaceships, battlecraft, and missiles currently in play.

Each unit is moved a number of hexes equal to its current velocity in the direction the unit is pointing, in accordance with the restrictions of 6.0. If a unit is moved into a hex occupied by a planet, the Phasing player may alter the unit's velocity and/or direction (see 6.5). If a unit is moved into a hex occupied by asteroids, the Phasing player must check for possible collision (see 6.6). If a missile is moved into a hex occupied by an enemy unit, or if a friendly unit is moved into a hex occupied by an enemy missile, the Interception Routine must be conducted (see 9.6).

2. SECOND PLAYER COMMAND PHASE

a. Detection Segment

The second player flips over every unrevealed enemy unit within three hexes of each of his spaceships. Once an enemy unit is revealed, it remains revealed for the rest of the game.

b. Command Segment

The second player issues Commands to each of his units.

All of his eligible spaceships, battlecraft, intelligent missiles, and MIMS may be issued Maneuver Commands. Each of his *guided* missiles may be issued Maneuver Commands if the appropriate Battle Command is issued to the spaceship controlling the missile. An unguided missile may be issued no Commands; however, the current velocity of each of his unguided missiles must now be increased by one.

3. FIRST PLAYER FIRE PHASE

The first player may conduct laser and particle fire and/or launch missiles from each of his eligible spaceships and battlecraft.

The result of each laser and particle fire is determined immediately, as each is declared. Each launched missile is placed in a hex adjacent to the spaceship from which it is launched. Each friendly battlecraft may be used to conduct one laser fire (only). Each friendly spaceship may be used to conduct a variable number of laser and particle fires and to launch missiles, depending on the capabilities of its pods.

4. SECOND PLAYER MOVEMENT PHASE

The second player conducts the activities listed in Phase 1.

5. FIRST PLAYER COMMAND PHASE

The first player conducts the activities listed in Phase 2.

6. SECOND PLAYER FIRE PHASE

The second player conducts the activities listed in Phase 3.

One Game-Turn is now completed and another is begun. The players continue this sequence until one player has fulfilled his victory conditions.

[4.0] Spaceships

GENERAL RULE:

The 12 spaceship Classes from which the players are assigned ships in *DeltaVee* vary widely in size and quality. Each spaceship is actually a hull with one to 12 attached pods. (**Note**: The two *Terwillicker* ship Classes are considered battlecraft and do not carry pods.) In addition to the information listed for each spaceship Class on the Spaceship Attribute Chart, each ship possesses a sublight engine, a bridge with navigation equipment, and living quarters for a crew necessary to keep the craft running. Four industrial concerns produce the spaceships:

Terwillicker Spaceworks, Inc. manufactures the *Terwillicker-5000*, a high-quality two-person craft; and the *Terwillicker-X* fighter, an innovative adaptation of the 5000 designed for military use.

Blades Research Institute produces military craft under long-term contract. The *Dagger*, *Sword*, and *Spear* Class ships are their most successful models.

Harmonics, Inc. specializes in finely crafted ships for government and high level corporate use. The *Piccolo*, *Flute*, and *Clarinet* represent the top of their line.

The **Corco Group** manufactures a large line of commercial vessels, often sacrificing performance for economy. The *Gamma*, *Zeta*, and *Mu* Classes are well-suited for transport

in safe regions. The *Iota* is designed to appeal to merchants working in dangerous areas.

CASES:

[4.1] The Velocity Rating represents the maximum change in velocity a spaceship may make at once.

Thus, a *Sword* Class ship may increase or decrease its current velocity up to three levels in a single Command Phase, while a *Spear* Class ship may increase or decrease its current velocity by only one level in a single Command Phase.

[4.2] The Maneuver Rating is the maximum number of Maneuver Commands that may be issued to a spaceship in a single Command Phase.

The actual number of Maneuver Commands that may be issued to a ship equals its Maneuver Rating minus its current velocity.

[4.3] The Energy Capacity and the Energy Burn Rate are used to measure a spaceship's expenditure of energy.

The total number of *Energy Units* a ship begins the game with is represented by its Energy Capacity. Each time a ship is required to expend an *Energy Block* (see 7.5), a number of Energy Units equal to its Energy Burn Rate are expended. A ship that possesses an *energy pod* has 144 extra Energy Units at the start of play (see 5.6).

[4.4] Each spaceship possesses a laser weapon, called a burster.

A Class 1 burster may be used to conduct laserburst *only*. A Class 2 burster may be used to conduct laserbursts or laser barrages.

[4.5] Nine of the spaceship Classes are armored, as a defense against enemy laser and particle fire.

Class 2 armor provides more protection than Class 1 armor (see 8.8). Three ship Classes possess no armor at all.

[4.6] Five of the spaceship Classes possess a force field generator, as a defense against enemy missile explosions.

A Class 2 force field provides more protection than a Class 1 force field (see 9.8). Seven ship Classes possess no force field generator at all.

[4.7] The Civ Level of a spaceship Class ranges from 6 to 8.

A ship's Civ (Civilization) Level may affect the performance of certain pods attached to it. Civ Levels represent the sophistication of the materials and equipment that make up the ship. As a comparison, current technology (1980's) is just under Civ Level 5.

[4.8] The Targeting Program represents the ability of the spaceship's tracking systems to target enemy ships for laser and particle fire.

The effectiveness of the Targeting Program is expressed as a modifier applied to the *relative velocity* of the target ship and the firing ship (see 8.5).

[4.9] The Spaceship Attribute Chart describes the specific characteristics of each spaceship Class.

See charts and tables.

[5.0] Pods

GENERAL RULE:

A pod is a compartment serving a specific function that is attached to or enclosed in a spaceship. Each spaceship is assigned a variety of pods, in accordance with the scenario being played. The number of pods a ship possesses and the nature of those pods make each ship in *DeltaVee* distinct. All the major attributes of each pod are listed on the Pod Attribute Chart. Additional properties of certain pods are listed in 5.6.

CASES:

[5.1] Hunter, light weapon, heavy weapon, and arsenal pods may fire laser and particle weapons and launch missiles.

All four of these pods may fire laser and particle bursts and barrages (see 8.0). The number of missiles of the four types (unguided, guided, intelligent, and MIMS) each pod carries is listed on the Pod Attribute Chart. Certain missiles require a Battle Command in order to be launched (see 9.1). No other pods may be used to either fire weapons or launch missiles.

[5.2] The number of Battle Commands a player may issue to a ship in a single Command Phase is equal to the sum of the Battle Commands provided by each eligible pod.

The light weapon, heavy weapon, and arsenal pods each contribute one Battle Command to the ship's total. The battle communications pod contributes two Battle Commands to the ship's total. No other pods contribute Battle Commands.

[5.3] The Civ Level of a pod may affect the functions it performs.

The Civ Level of a pod is reduced by one if it is greater than the Civ Level of the spaceship to which it is attached. Also refer to 4.7.

[5.4] The Targeting Program affects laser and particle fire conducted from the pod.

See 4.8 and 8.5. The Targeting Program modifier for the battle communications pod is applied to fire from anywhere on the ship. Targeting Program modifiers in other pods apply to fire from that pod only.

[5.5] The hunter, light weapon, and heavy weapon pods may be used to fire or launch one of its weapons or missiles during the friendly Fire Phase.

The arsenal pod may be used to fire or launch two of its weapons or missiles during the friendly Fire Phase. The battle communications pod allows one additional fire or launch (see 5.6).

[5.6] The following pods possess special attributes not listed on the Pod Attribute Chart:

Battle Communications. Allows *one* extra fire from any *one* pod or burster on the spaceship during the friendly Fire Phase. The player may conduct Active Search more effectively from the pod (see 7.4). The pod's Targeting Program allows a modifier of **−6** for any laser or particle fire conducted from anywhere on the ship.

Tractor Beam. Allows the player to issue Maneuver Commands to another friendly or enemy spaceship or battlecraft during his Command Phase, as if he controlled the unit. The player must issue a Battle Command to use the tractor beam. If he does so, a Civ Level 7 tractor beam may be used to issue *one* Maneuver Command to any one unit *within four hexes* of the ship with the tractor beam. A Civ Level 8 tractor beam may be used to issue *two* Maneuver Commands to any one ship *within six hexes* of the ship with the tractor beam. A tractor beam may not be used to issue Maneuver Commands to an enemy or friendly *missile*. Each Maneuver Command issued by using a tractor beam requires the expenditure of a number of Energy Units equal to *twice* the Energy Burn Rate of the target unit.

Battlecraft. Contains one *Terwillicker-5000* or one *Terwillicker-X* (as specified by the scenario) that may be launched from the spaceship. To launch a battlecraft, Battle Commands must be issued in two friendly Command Phases (see 7.4). Once a battlecraft has been launched from its pod, it is treated as any other spaceship. However, a separate Battle Log is not used; the requisite information for each battlecraft is listed on the "mother" ship's Battle Log. A battlecraft may be returned to the ship from which it was launched (only) during any Command Phase in which the two units occupy the *same* hex, have *identical velocities*, and are pointing in the *same direction*. If these requirements are met, the battlecraft may be docked in its pod by issuing a Rendezvous Command. Each battlecraft begins play with 15 Energy Units. When in its pod, a battlecraft may replace expended Energy Units by drawing from the supply of Energy Units aboard the ship; no Command is required to do so (see 10.4).

Standard Jump, Augmented Jump, and Hunter. In certain scenarios, one or both players may remove a ship with a jump pod entirely from play (which is better than being destroyed). Otherwise, a jump pod has no effect on play. See 7.2 for details. A hunter pod contains a standard jump engine.

Energy. Contains 144 additional Energy Units. A ship with an energy pod expends all the Energy Units in the pod before expending Energy Units in its hull.

[5.7] The following pods have no effect on play except that damaging or destroying any of them on an enemy spaceship may aid a player in fulfilling his Victory Conditions.

Luxury cabin, standard cabin, crew, advanced medical, bio-research, standard cargo, buffered cargo, living cargo, lander, survey, robot and equipment, explorer, escape/EVA. Each of these pods may have an Armor Rating ranging from 0 to 2, as specified by the scenario.

[5.8] The Pod Attribute Chart summarizes the properties of all the pods that may be used during the game.

See charts and tables.

[6.0] Movement and Direction

GENERAL RULE:

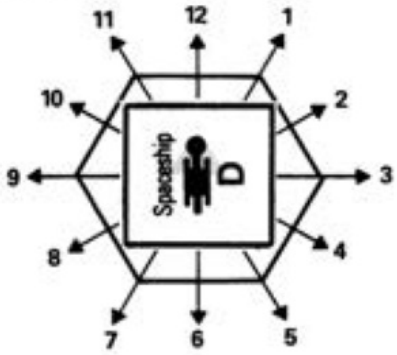
During a player's Movement Phase, he must move each and every one of his ships, battlecraft, and missiles currently in play. The number of hexes each unit must be moved is determined by its Velocity marker. The direction each unit must be moved is determined by the direction in which the unit is pointing. The player has no choice in the movement of his units during the Movement Phase (**Exception:** See 6.5).

PROCEDURE:

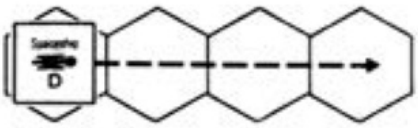
The player moves his units one at a time, in any order he desires. He moves each unit a number of hexes equal to its *current velocity*. Each unit is moved in a straight line, in the direction in which it is pointing. When the move is completed, the unit should point in the same direction in its destination hex.

CASES:

[6.1] A unit may point in one of 12 directions.



This is shown by orienting the unit marker's arrow toward a hex side or a hex corner. These directions may be equated to the numbers on a clock face.



A unit that is pointing toward a hexside is moved along the hexrow extending from that hexside.

A unit that is pointing toward a hex corner is moved along a line extending from that corner. However, the unit is moved in a zig-zag pattern: first to the left, then to the right, then to the left, etc.

If a unit that is pointing towards a hex corner is moved an odd number of hexes, a Direction Reminder marker should be placed in the hex immediately ahead of the unit's final position in the move (i.e.., in the hex the unit would occupy if the length of its move were one hex more). This reminds the players which zig-zag hexrow the unit should be moved through in its next move, so that "slippage" of the unit's direction to either side will not occur. A Direction Reminder marker has no effect on play (except to remind the player of the unit's proper direction) and is removed when the player changes direction.

The players must make sure that the orientation of each unit is always clearly evident. When more than one unit occupies a single hex, special care must be taken to show the orientation of each unit. The direction a unit points may be changed only during the Command Phase (**Exception:** See 6.5).

[6.2] When a ship or battlecraft is directed to move off the maps currently in use, an unused map should be placed to abut the map edge from which the unit will exit.

This may be done whenever necessary, as long as the relative positions of all units and markers in the game remains the same. When placing a new map, make sure that the hexgrid pattern is properly aligned with the other maps. A missile that is directed to move off the map is removed from play; a map is not specially positioned for it.

[6.3] A unit with a zero Velocity marker is not moved.

A unit without a Velocity marker that is stacked with a ship (such as an unlaunched missile or battlecraft) is moved with the ship and has no effect on the ship's movement.

[6.4] A unit may be moved into and through hexes occupied by enemy or friendly units.

The Interception Routine (see 9.6) is conducted when a missile is moved into a hex occupied by an enemy unit at any point during its move, or if any unit is moved into a hex occupied by an enemy missile at any point during its move. There is no limit to the number of units that may occupy a single hex at any given time.

[6.5] The instant a spaceship or battlecraft is moved into a planet hex, the Phasing player may issue the unit Maneuver Commands.

The number of Maneuver Commands the unit may receive is determined as in 7.1. Such a unit may immediately receive the following Maneuver Commands only: Accelerate, Decelerate, and Direction Change, within the restrictions of 7.2. However, the unit's current velocity may not be reduced below **1** in this manner (but may be during the Command Phase). A unit expends no energy for Maneuver Commands received as a result of entering a planet hex.

If a unit's current velocity is altered upon entering a planet hex, the number of hexes the unit has already traversed in its move is subtracted from the unit's new velocity to determine the number of hexes the unit must now be moved (in its new direction, if also altered). If this number is **0** or less, the unit is moved no further (it remains in the planet hex).

A unit with a current velocity of **1** that occupies a planet hex is considered to be orbiting that planet, and need not be moved during the Movement Phase.

If the current velocity of a streamlined spaceship or battlecraft in a planet hex is reduced to **0** during the Command Phase, the unit is considered to land on the planet during the immediately following friendly Movement Phase. When this occurs, the unit's Velocity marker is removed and the unit remains in the planet hex for the remainder of the game. The unit may not be used for any game functions but is not considered destroyed. A unit that is not streamlined may not land on a planet.

A missile is automatically destroyed upon entering a planet hex.

[6.6] When a unit is moved into a hex occupied by asteroids, the owning player must check for collision.

When an asteroid hex is entered, the unit's movement is interrupted while the player rolls a die. If the die result is less than or equal to the current velocity of the unit, it is hit by an asteroid. The player must then use the Hit Table as if the unit had just been hit by enemy fire (see 8.7). However, if a *critical hit* result is obtained from the table, it is considered a *no effect* result.

[6.7] No Energy Units or Energy Blocks are expended during the Movement Phase.

Energy is expended during the Command Phase and the Fire Phase.

[6.8] Under certain conditions, a ship may conduct a hyperjump during the Movement Phase.

When a ship does so, it is immediately removed from play. See 7.2 for details.

[7.0] Commands

GENERAL RULE:

Each player issues Commands to his units during his Command Phase. A player may issue *Maneuver Commands* to all his spaceships, battlecraft, and missiles (except unguided missiles) in play. A player may issue *Battle Commands* to all his spaceships (only) that possess the requisite pods. The number of Maneuver Commands that may be issued to a unit in a single Command Phase equals the unit's Maneuver Rating minus its current velocity. The number of Battle Commands that may be issued to a spaceship in a single Command Phase equals the sum of the Battle Commands provided by the ship's eligible pods.

PROCEDURE:

The Phasing player issues Commands to each of his units individually, in any order he desires. For each unit, he calculates the number of Maneuver Commands it may receive and then issues those Commands to the unit by performing the appropriate function listed in 7.2. If the unit is a spaceship, he calculates the number of Battle Commands it may receive and issues those commands to the ship by performing the appropriate functions listed in 7.4. He then records the requisite expenditure of Energy Blocks (if the unit is a spaceship) or Energy Units (if a battlecraft or a missile).

CASES:

[7.1] The number of Maneuver Commands issued to a unit in a single Command Phase may never exceed the unit's Maneuver Rating.

The number of Maneuver Commands a unit may receive is further reduced by its current velocity. Thus, if a unit with a Maneuver Rating of **7** had a current velocity of **4**, it could only receive three Maneuver Commands. **Exception:** If a unit's current velocity equals or exceeds its Maneuver Rating, the unit may be issued *one* Decelerate or Accelerate Command *only*.

No Maneuver Command may be issued to a spaceship that possesses a Prepare Jump or Jump marker, or that has an operating force field. No Maneuver Commands may be issued to a *guided* missile unless the appropriate Battle Command is issued to the spaceship controlling the missile (see 7.4). An *unguided* missile has no Maneuver Rating and may not be issued Maneuver Commands. However, during each Command Phase, the current velocity of each of the Phasing player's unguided missiles must be increased by one.

A player is not required to issue a ship its maximum number of Maneuver Commands. However, Maneuver Commands may not be transferred from one unit to another or accumulated from Game-Turn to Game-Turn. These restrictions apply to Battle Commands as well.

[7.2] An eligible unit may be issued following Maneuver Commands:

Accelerate / Decelerate. The Velocity marker of the unit is changed for a marker one greater or less in value. Thus, if a unit with a current velocity of **3** is issued an Accelerate Command, its Velocity marker is exchanged for a **4** Velocity marker. If the unit were issued a Decelerate Command instead, it would receive a **2** Velocity marker. Assuming a unit has the requisite Maneuver Commands, it may be issued any number of Accelerate or Decelerate Commands in a single Command Phase, up to a number *equal to* its Velocity Rating.

Direction Change. The direction that the unit is pointing is altered by one position (from a hexside to an adjacent hex corner, or from a hex corner to an adjacent hexside). Assuming a unit has the requisite Maneuver Commands, it may be issued any number of Direction Change Commands in a single Command Phase.

Weave. This Command may be issued to spaceships and battlecraft only (not to missiles). The unit is immediately moved to any adjacent hex. The unit's velocity and direction are not changed (unless additional Maneuver Commands are issued). Only one Weave Command may be issued to a given unit in a single Command Phase. A unit may not weave into an asteroid hex or planet hex.

Prepare Jump / Abort Jump / Jump. In certain scenarios, a spaceship with a standard jump pod may prepare for a hyperjump away from the playing area. A Prepare Jump marker is placed atop the ship. In the following friendly Command Phase, the player must issue a Jump Command to the ship (the Prepare Jump marker is flipped over) or issue an Abort Jump Command to the ship (the Prepare Jump marker is removed). If a Jump Command is issued to the ship, it must be removed from play in the following friendly Movement Phase. A ship with an augmented jump pod need not be issued a Prepare Jump Command; it requires only a Jump Command (place a Jump marker atop the ship). A Jump Command may not be issued to a ship that has an active force field (a Prepare Jump Command may be issued to such a ship).

[7.3] The number of Battle Commands issued to a spaceship may not exceed the allotment provided by its eligible pods.

A light weapon, heavy weapon, or arsenal pod each allow a ship to receive one Battle Command. A battle communications pod allows a ship to receive two Battle Commands. Thus, a spaceship with two heavy weapon pods and a battle communications pod could receive four Battle Commands in a single Command Phase. The number of Battle Commands a spaceship may receive has no effect on the number of Maneuver Commands it may receive, and vice versa.

[7.4] An eligible spaceship may be issued the following Battle Commands:

Prepare Missile. If a spaceship has a light weapon, heavy weapon, or arsenal pod, the Phasing player may prepare a missile for launch by placing the appropriate missile counter (without a Velocity marker) *face-down* atop the ship. Consult the Pod Attribute Chart to find which pods may launch missiles and which of those missiles require a Prepare Missile Command. A prepared missile may be launched in any subsequent friendly Fire Phase (see 9.4). Assuming a spaceship has the requisite Battle Commands, it may be issued any number of Prepare Missile Commands in a single Command Phase. However, the maximum number of prepared missiles that a ship may carry at one time is limited to the number of missile-carrying pods the ship possesses. Thus, a ship with two heavy weapon pods may carry no more than two prepared missiles at a time. Until a prepared missile is launched, it is moved with its ship and has no effect on play.

Control Guided Missile. The player may issue Maneuver Commands to a guided missile previously launched from the spaceship. By issuing the spaceship one such Battle Command, the player may immediately issue any number of Maneuver Commands (within the restrictions of 7.1) to one of the ship's guided missiles currently in play.

Active Search. The player may flip over every enemy unit that is currently unrevealed within *six* hexes of the spaceship to which he is issuing this Command. This range is counted by including the enemy unit's hex but not the searching spaceship's hex. Once a unit is flipped over, it remains revealed for the rest of the game. If the spaceship to which an Active Search Command is issued possesses a battle communications pod, every inverted enemy unit within 10 hexes is flipped over. **Note:** Active Search should not be confused with *detection*, which occurs automatically at the beginning of the Command Phase and does not require a command.

Prepare Battlecraft. If a spaceship has a battlecraft pod containing a battlecraft, the player may prepare the battlecraft for launch by placing the appropriate battlecraft counter (without a Velocity marker) face-down atop the spaceship. The battlecraft remains stacked with the spaceship (and is moved with the ship) until the player issues a Launch Battlecraft Command to the ship in any subsequent friendly Command Phase.

Launch Battlecraft. The player may launch a prepared battlecraft (that is, a battlecraft placed atop a spaceship in a previous friendly Command Phase) by placing the battlecraft in any hex adjacent to the spaceship. The battlecraft must be assigned a Velocity marker equal to, one less than, or one greater than the current velocity of the spaceship. **Exception:** A battlecraft must be launched with a minimum velocity of **1**. The battlecraft must be pointing in the same direction that the ship is pointing when launched, or one of the two adjacent directions on either side (thus, a battlecraft may be pointing in one of five directions when launched). Launching a battlecraft does not require the expenditure of energy from the involved spaceship or battlecraft.

Rendezvous. If a friendly spaceship or battlecraft occupies the same hex as an enemy or friendly spaceship or battlecraft, the two may be docked together. However, the two units must have identical velocities and must point in the same direction. This Command is used when a player wishes to dock a battlecraft in the ship from which it was launched (see 5.6) or when a player wishes to dock with an enemy ship to fulfill a requirement listed in a scenario. Two spaceships that are docked together use *one* Velocity marker only. During the Command Phase, the Phasing player may issue Maneuver Commands to both ships as if they were one. If the expenditure of an Energy Block is required, a number of *Energy Units* equal to the Energy Burn Rate of both spaceships combined is expended. In this way one ship may "tow" another.

Tractor Beam. If a spaceship has a tractor beam pod, the player may acivate its tractor beam. The player then issues Maneuver Commands to one other spaceship or battlecraft, as explained in 5.6. A single tractor beam pod may only be issued one Command per Command Phase and does not remain active from Game-Turn to Game-Turn.

Activate / Deactivate Force Field. If a spaceship possess a force field (Class 1 or 2), it may be activated by flipping the spaceship over to its forcefield side. When activated, the force field provides protection against enemy missiles, but not against enemy laser or particle fire. Furthermore, the only commands that may be issued to a ship with an active force field are Prepare Jump, Abort Jump, Prepare Missile, Active Search, and Prepare Battlecraft. A missile may not be launched (but laser and particle fire may be conducted) from a spaceship with an active force field. An active force field may be deactivated by flipping the ship counter back to its normal side. A player may *attempt* to activate the force field of a ship that has been intercepted by a missile at the moment of interception (see 9.8).

[continued on page 11]

DELTA VEE SPACESHIP LOG Nr. 1

Spaceship Name FLUTE ID A

Velocity Rating 3 | Maneuver Rating 6 | Burster Class 1 | Target Program -4

COMPARTMENTS

	ARMOR	STATUS
Bridge	2	
Engine	2	
Force Field	2	
PODS 1 ENER	2	
2 B.C.	2	
3 H.W.	2	
4 S.J.	2	
5		
6		

UNGUIDED MISSILES POD/#

GUIDED MISSILES POD/# ENERGY UNITS

INTELLIGENT MISSILES

MIMS

ENERGY BLOCKS

ENERGY UNIT TRACK

	1	2	3	4
5	6	7	8	

BATTLECRAFT

	ARMOR	STATUS
Bridge	1	
Engine	1	

Energy Units

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DELTA VEE SPACESHIP LOG Nr. 1

Spaceship Name ID

Velocity Rating | Maneuver Rating | Burster Class | Target Program

COMPARTMENTS

	ARMOR	STATUS
Bridge		
Engine		
Force Field		
PODS 1		
2		
3		
4		
5		
6		

UNGUIDED MISSILES POD/#

GUIDED MISSILES POD/# ENERGY UNITS

INTELLIGENT MISSILES

MIMS

ENERGY BLOCKS

ENERGY UNIT TRACK

0	1	2	3	4
	5	6	7	8

BATTLECRAFT

	ARMOR	STATUS
Bridge		
Engine		

Energy Units

Players may photo-copy this logsheet for personal use.

[4.9] SPACESHIP ATTRIBUTE CHART

CLASS / BATTLECRAFT	NUMBER OF PODS	VELOCITY RATING	MANEUVER RATING	ENERGY CAPACITY	ENERGY BURN RATE	STREAMLINED	BURSTER CLASS	ARMOR CLASS	FORCE FIELD CLASS	CIV LEVEL	TARGET PROGRAM
Terwillicker 5000	0	2	7	15	1	Yes	1	1	0	7	−2
Terwillicker-X	0	3	9	15	1	Yes	2	2	0	8	−4
SPACESHIPS											
Dagger	2	2	6	48	4	Yes	2	2	1	8	−4
Sword	5	3	8	78	6	No	2	2	2	8	−4
Spear	8	1	4	144	12	No	2	2	2	8	−4
Piccolo	1	3	8	30	3	Yes	1	1	0	7	−2
Flute	4	3	6	66	6	Yes	1	2	1	8	−4
Clarinet	7	2	7	104	8	No	1	1	0	8	−4
Corco Gamma	3	1	4	54	6	Yes	1	0	0	7	−2
Corco Zeta	6	1	3	80	8	No	1	0	0	6	0
Corco Iota	9	2	5	120	12	No	1	1	1	7	−4
Corco Mu	12	1	4	176	16	No	1	0	0	7	−2

See 4.0 for detailed explanation of use.

[8.3] RELATIVE VELOCITY CHART

CURRENT VELOCITY OF TARGET UNIT	Current Velocity of Firing Unit								
	0,1	2	3	4	5	6	7	8	9
0,1	1*	2	3	4	5	6	7	8	9
2	2	3	4	4	5	6	7	8	9
3	3	4	4	5	6	7	8	9	9
4	4	4	5	6	6	7	8	9	10
5	5	5	6	6	7	8	9	9	10
6	6	6	7	7	8	8	9	10	11
7	7	7	8	8	9	9	10	11	11
8	8	8	9	9	9	10	11	11	12
9	9	9	9	10	10	11	11	12	13

*If the velocity of both units is **0**, the relative velocity is **0**.

If the compared directions of the target unit and the firing unit do not fulfill the conditions of statements 1 or 2 in 8.3, use this chart to determine the relative velocity of the units. The current velocity of each unit is cross-referenced to yield their relative velocity.

[5.8] POD ATTRIBUTE CHART

POD TYPE	LASER/PARTICLE WEAPONS	UNGUIDED MISSILE	GUIDED MISSILE	INTELLIGENT MISSILE	MIMS	BATTLE COMMANDS	CIV LEVEL	TARGET PROGRAM	JUMP	SEE 6.6	NUMBER OF FIRES	ARMOR
Hunter	Yes	2	0	1	0	0	8	−4	Yes	X	1	2
Light Weapon	Yes	5*	3*	0	0	1	6	−2	No	-	1	1
Heavy Weapon	Yes	6	5*	3*	1*	1	7	−4	No	-	1	2
Arsenal	Yes	8	7	5*	2*	1	8	−4	No	-	2	2
Battle Comm	No	0	0	0	0	2	8	−6	No	X	1	2
Tractor Beam	No	0	0	0	0	0	7,8	-	No	X	0	0-2
Battlecraft	No	0	0	0	0	0	-	-	No	X	0	0-2
Standard Jump	No	0	0	0	0	0	7	-	Yes	X	0	0-2
Augmented Jump	No	0	0	0	0	0	8	-	Yes	X	0	0-2
Energy	No	0	0	0	0	0	-	-	No	X	0	0-2
All Others	No	0	0	0	0	0	-	-	No	-	0	0-2

See 5.0 for detailed explanation of use. *Launch of missiles requires Prepare Missile Command in previous Command Phase.

[8.7] HIT TABLE

DIE	Part of Target Hit
1	Critical Hit. If the unit is a revealed missile, it is destroyed. If the unit is unrevealed (of any type), treat as "no hit."
2	Bridge, Engine. If the unit is a missile (revealed or unrevealed), it is destroyed.
3	Force Field, Pod 8
4	Pod 1, Pod 9
5	Pod 2, Pod 10
6	Pod 3, Pod 11
7	Pod 4, Pod 12
8	Pod 5, Pod 13
9	Pod 6, Pod 14
10	Pod 7, Pod 15

See 8.7 for detailed explanation of use.

[8.6] FIRE RESULTS TABLE

ENERGY UNIT COST	Type of Fire	Target Value 0	1	2,3	4,5	6,7	8,9	10,11	12-14
0	**Laser Burst**	7	6	5	4	3	2	1	-
2	**Laser Barrage**	9	8	7	6	5	4	3	1
1	**Particle Burst**	A	9	7	4	1	-	-	-
3	**Particle Barrage**	A	A	9	7	4	1	-	-

A: Hit is automatic; no die roll is conducted. Proceed to the Hit Table. (-): Hit is impossible; no die roll is conducted. If the Target Value is greater than 14, a hit with any type of fire is impossible. See 8.6 for explanation of use.

[9.5] MISSILE CHART

MISSILE TYPE	CIV LEVEL	VELOCITY RATING	MANEUVER RATING	ENERGY UNITS
	6	1	5	7
	7	2	5	9
	8	2	6	10
	6	2	5	6
	7	2	6	7
	8	2	7	9
	7	2	6	6
	8	2	7	7

See 9.5 for detailed explanation of use.

[9.7] MISSILE INTERCEPTION TABLE

MISSILE CIV LEVEL	Relative Velocity 0	1,2	3,4	5-7	8-10	11 OR MORE
6	8	6	4	2	1	1
7	9	7	5	3	2	1
8	A	8	6	4	3	2

A: Interception is automatic; the die is not rolled. See 9.6 for detailed explanation of use.

[7.7] ENERGY EXPENDITURE SUMMARY

Action or Situation: ***Energy Expenditure***

Issuing more than **1** Acceleration, Deceleration, or Direction Change Maneuver Command per Phase: **1** *Energy Block if spaceship;* **1** *Energy Unit if battlecraft.*

Missile Maneuver: **1** *Energy Unit per Maneuver Command.*

Weave Command: **1** *Energy Block if spaceship;* **1** *Energy Unit if battlecraft.*

Activate Spaceship force field: **1** *Energy Block.*

Use Tractor Beam: *Enrgy Units equal to twice the Energy Burn Rate or target unit per each Maneuver Command.*

Replenish Battlecraft energy levels: *Number of Energy Units needed or desired, up to maximum of 15.*

Maneuver Docked Spaceships: *Energy Units equal to sum of both ships' Energy Burn Rate.*

Particle Burst: **1** *Energy Unit.*

Laser Barrage: **2** *Energy Units.*

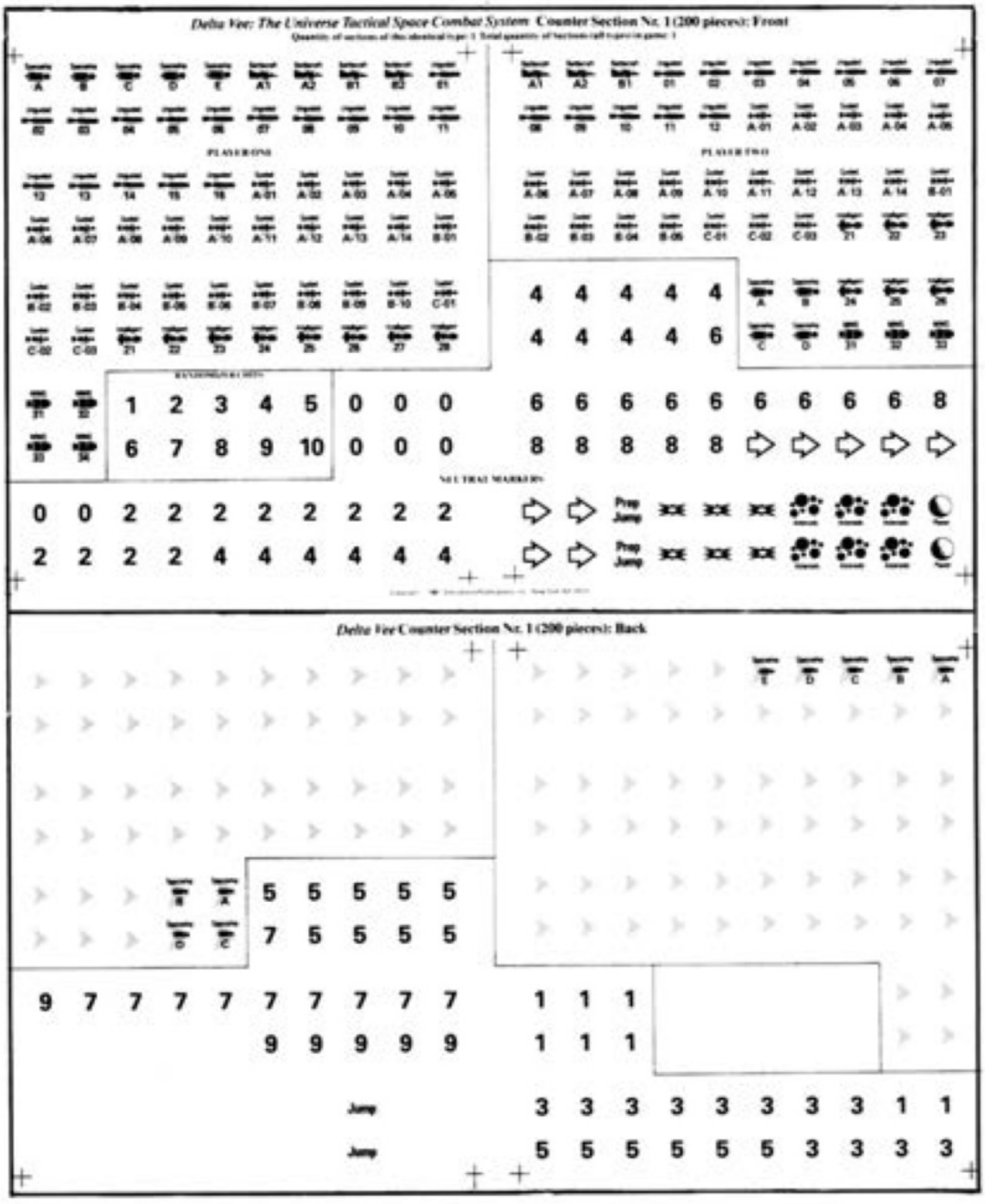
Particle Barrage: **3** *Energy Units.*

If Engine is Damaged: **1** *Energy Block per each and every Maneuver Command.*

If Energy Pod is Damaged: **–10** *Energy Units each Command Phase.*

If Energy Pod is Destroyed: *Total Energy Units expended immediately increased to 144.*

Note: The *Delta Vee* counters are reproduced here to aid players in replacing lost or damaged counters


Delta Vee: The Universe Tactical Space Combat System Counter Section No. 1 (200 pieces): Front
Delta Vee Counter Section No. 1 (200 pieces): Back

DELTA VEE SPACESHIP LOG Nr. 2

Spaceship Name _____ ID _____

Velocity Rating _____ Maneuver Rating _____ Burster Class _____ Force Field Class _____ Target Program _____ Nr. of Battle Commands _____ Nr. of Fires _____

COMPARTMENTS

	ARMOR	STATUS
Bridge		
Engine		
Force Field		
Pod 1		
Pod 2		
Pod 3		
Pod 4		
Pod 5		
Pod 6		
Pod 7		
Pod 8		
Pod 9		
Pod 10		
Pod 11		
Pod 12		

UNGUIDED MISSILES

Pod/#

GUIDED MISSILES

Pod/# ENERGY UNITS

INTELLIGENT MISSILES

Pod/# ENERGY UNITS

MIMS

ENERGY BLOCKS

ENERGY UNIT TRACK

0	1	2	3	4	
5	6	7	8	9	10
11	12	13	14	15	16

BATTLECRAFT #1

	ARMOR	STATUS
Bridge		
Engine		

ENERGY UNITS

BATTLECRAFT #2

	ARMOR	STATUS
Bridge		
Engine		

ENERGY UNITS

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[continued from page 6]

[7.5] A unit must expend Energy Units or Blocks when issued certain Commands, depending on the type of unit.

The expenditure of Energy Units and Blocks is recorded on the appropriate Spaceship Log (see 10.3).

- A **spaceship** must expend one Energy *Block* and a **battlecraft** must expend one Energy *Unit* when it is issued *more than one* **Accelerate, Decelerate** and/or **Direction Change** Command in a single Command Phase. Regardless of how many of these Commands (beyond one) a ship or battlecraft receives in a Command Phase, only one Energy Block or Unit is expended. A spaceship or battlecraft that receives only one of the above Commands in a single Command Phase expends no energy (although it may expend energy as a result of other Commands it receives).
- A **spaceship** must expend one Energy *Block* and a **battlecraft** must expend one Energy *Unit* when issued a **Weave** Command. This expenditure is in addition to any that may be required for other Maneuver Commands.
- A **missile** must expend one Energy *Unit* each time it is issued a Maneuver Command. Thus, if a missile is issued two Accelerate and one Direction Change Commands, three Energy Units are expended.
- A **spaceship** must expend one Energy Block when issued an **Activate Force Field** Command.
- A **spaceship** that uses its **tractor beam** must expend a number of Energy Units equal to *twice* the Energy Burn Rate of the ship or battlecraft to which it is issuing a Maneuver Command. This expenditure must be made for *each* Maneuver Command issued to the target unit. A unit that is issued a Maneuver Command through a tractor beam does not expend energy for that Command.
- During the Fire Phase, a spaceship or battlecraft must expend Energy Units when conducting a laser barrage, a particle burst, or a particle barrage (see 8.2).

[7.6] A unit that has expended all its available energy may be issued no Command that requires the expenditure of energy.

[7.7] The Command Summary lists the names of every Command that a player may possibly issue to a unit.

See charts and tables.

[8.0] Laser and Particle Fire

GENERAL RULE:

During a player's Fire Phase, he may conduct laser and/or particle fire against revealed and unrevealed enemy units with all his eligible spacecraft and battlecraft. There are four types of fire: a laser burst, a laser barrage, a particle burst, and a particle barrage. Successful fire may result in a pod or other part of an enemy unit being damaged or destroyed. Fire may be conducted in any direction.

PROCEDURE:

The Phasing player declares and resolves each fire one at a time. All fires conducted from one spaceship or battlecraft must be resolved before conducting fires from another spaceship or battlecraft. For each fire conducted, the Phasing player undertakes the following steps, in order.

1. Declare what type of fire is being conducted, from where the fire is coming, and which enemy spaceship, battlecraft or missile is the target of the fire. If necessary, note the expenditure of Energy Units on the appropriate Spaceship Log.

2. Determine the *range* in hexes from the firing unit to the target unit. Range is counted by including the target unit's hex and all hexes lying between the firing unit and the target unit, but not the firing unit's hex.

3. Determine the *relative velocity* of the two units, using the Relative Velocity Chart if necessary. Subtract the *Targeting Program modifier* of the firing unit from the relative velocity and then add the modified relative velocity to the range to determine the *Target Value.*

4. Refer to the Fire Results Table, cross-referencing the proper Target Value column with the row matching the type of fire declared to find the *Hit Chance.* Roll the die; if the die result is less than or equal to the Hit Chance, the target may have been hit. Proceed to Step 5. If the die result is greater than the Hit Chance, the fire has missed the target and this procedure is concluded.

5. Roll the die again and refer to the Hit Table to determine which part (if any) of the enemy unit has been hit. The non-Phasing player must immediately apply the effects of the hit to the target unit.

CASES:

[8.1] The number and types of fires a spaceship or battlecraft may conduct in a single Fire Phase depends on the Class of its burster and the attributes of its pods.

- A **Class 1 burster** on a spaceship or battlecraft allows one laser **burst** each Fire Phase.
- A **Class 2 burster** on a spaceship or battlecraft allows one laser **burst** or one laser **barrage** each Fire Phase.
- A **hunter, light weapon** and **heavy weapon pod** each allow *one fire of any type* (or one missile launch, see 9.2) each Fire Phase.
- An **arsenal pod** allows *two fires of any type* (or one fire and one missile launch, or two missile launches) each Fire Phase.
- A **battle communications pod** allows *one additional fire of any type* (or one additional missile launch) from any of the above eligible items each Fire Phase.

All these items are cumulative. Thus, a spaceship with two light weapon pods may be used to conduct three fires each Fire Phase (one from its burster and one from each weapon pod). If the ship also possesses a battle communications pod, it could conduct one additional fire from its burster or either weapon pod (for a total of four fires per Fire Phase).

The number of fires a spaceship may conduct in a Fire Phase should not be confused with the number of Battle Commands the ship may receive in a Command Phase. Fires may not be conducted in the Command Phase, and Commands may not be issued in the Fire Phase.

[8.2] A unit that conducts any type of fire except a laser burst must expend one or more Energy Units.

A **particle burst** costs **1** Energy Unit, a **laser barrage** costs **2** Energy Units, and a **particle barrage** costs **3** Energy Units. The expenditure of Energy Units is recorded on the appropriate Spaceship Log (see 10.3).

[8.3] The relative velocity of the firing unit and the target unit is determined by comparing the direction and current velocity of each unit.

Imagine the two units are in the same hex and compare their directions on one of the following diagrams. Use the first if the firing unit points toward a hexside and the second if the firing unit points toward a hex corner. The direction of the target unit is matched to one of the 12 arrows radiating from the hexes.

Depending on the unit's relative directions, one of the following statements will apply:

1. If the target unit is pointing in the *same* direction as the firing unit, or an *adjacent* direction, their relative velocity equals the *difference* between their current velocities.

2. If the target unit is pointing in the *opposite* direction as the firing unit, or a direction *adjacent to the opposite direction*, their relative

velocity equals the *sum* of their current velocities.

3. If the target unit is pointing in any of the six directions not covered in the above two statements, refer to the Relative Velocity Chart and cross-reference the current velocity of each unit on the chart to find their relative velocity.

Example: The firing unit has a velocity of **4** and the target unit has a velocity of **3**. If their directions apply to statement 1, their relative velocity is **1**. If their directions apply to statement 2, their relative velocity is **7**. If their directions apply to statement 3, the Relative Velocity Chart is used to determine that their relative velocity is **5**.

[8.4] The relative velocity and the range between the firing unit and the target unit may be reduced if the positions of the two units fulfill either of the following conditions.

1. A straight line may be drawn between the two units and their indicated directions. **[See Diagram A]**

If this applies, the relative velocity is determined as described in 8.3 and is then *halved*, rounding fractions up. The range between the two units is *not* affected.

2. The two units are pointing in the *same* direction and their current velocities are *identical*. **[See Diagram B]**

If this applies, the relative velocity is *automatically zero* and the *range* between the two units is *halved*, rounding fractions up. If conditions 1 and 2 apply in a single situation, condition 2 takes precedence.

[8.5] Each spaceship and battlecraft possesses a Targeting Program which modifies the determined relative velocity.

The modifier is listed on the Spaceship Attribute Chart. If a fire is being conducted from a hunter, light weapon, heavy weapon, or arsenal pod, the Phasing player may use the Target Program modifier of either the pod *or* the spaceship. If a spaceship possesses a battle communications pod, a Targeting Program modifier of **−6** is applied to *all* fire conducted from the ship.

If, after applying the Targeting Program modifier, the relative velocity is less than zero, it is treated as zero. The Targeting Program modifier is *never* used to reduce the *range* between the firing unit and the target unit. After calculating the modified relative velocity, it is added to the range to determine the Target Value used with the Fire Results Table.

[8.6] The Fire Results Table is used to determine if a fire has hit its target.

The Target Value [Range + (Relative Velocity − Targeting Program)] is cross-referenced with the declared type of fire to determine the Hit Chance. The Phasing player then rolls the die; if the die result is equal to or less than the Hit Chance, he proceeds to the Hit Table.

[8.7] The Hit Table is used to determine which pod or other part of the target unit has been hit.

The Phasing player rolls the die and locates the die result on the table. With the exception of die result **1**, each result lists two parts of the target unit. If the target unit possesses *neither* of the listed parts, the hit is a glancing blow that has no effect. If the target unit possesses *only one* of the listed parts, that part has been hit. If the target unit possesses *both* of the listed parts, the *Phasing* player *chooses* which of the two parts has been hit. He can inspect the opposing player's applicable Spaceship Log before choosing.

If a **1** is rolled when using the Hit Table, a *critical hit* has occurred; the *Phasing* player chooses one part of the target unit listed on the Hit Table to receive the hit. He can inspect the opposing player's applicable Spaceship Log before choosing. **Exception:** If the target unit is *unrevealed*, a critical hit is treated as *no hit*.

If the target unit is a *revealed missile*, it is destroyed on the result of **1** or **2**. If the missile is *unrevealed*, it is destroyed on a result of **2** only. No other result on the Hit Table affects a missile.

[8.8] When a unit receives a hit, the owning player must record it on the appropriate Spaceship Log. The effects of a hit depend on the Armor Rating of the part hit.

- A part with a **0** Armor Rating is *destroyed* when first hit. An **X** is placed in the Status Box for that part on the Spaceship Log. Any further hits on that part have no additional effect.
- A part with a **1** Armor Rating is damaged when first hit. A **D** is placed in the Status Box for that part on the Spaceship Log. The part is destroyed when it receives a second hit.
- A part with a **2** Armor Rating is made vulnerable when first hit. A **V** is placed in the Status Box for that part on the Spaceship Log. The part is damaged when it receives a second hit and destroyed when it receives a third hit.
- A missile is always destroyed when first hit. Draw a line through all the boxes for that missile on the Spaceship Log and remove the missile from play.

The bridge, engine and forcefield (if any) of a spaceship are located in the main hull and are considered to have the Armor Rating of the spaceship.

[8.9] When a pod or other part of a spaceship or battlecraft is damaged or destroyed, the capabilities of that part are immediately impaired.

The following list summarizes all the effects of damage and destruction.

Bridge. *Damaged:* The Maneuver Rating of the unit is reduced by two and the unit may no longer receive Weave Commands. *Destroyed:* The Maneuver Rating of the unit is reduced to **1** and the unit may no longer receive Weave Commands.

Engine. *Damaged:* Each and every Maneuver Command issued to the unit requires the expenditure of one Energy Block. *Destroyed:* The unit may receive no Maneuver Commands at all.

DIAGRAM A

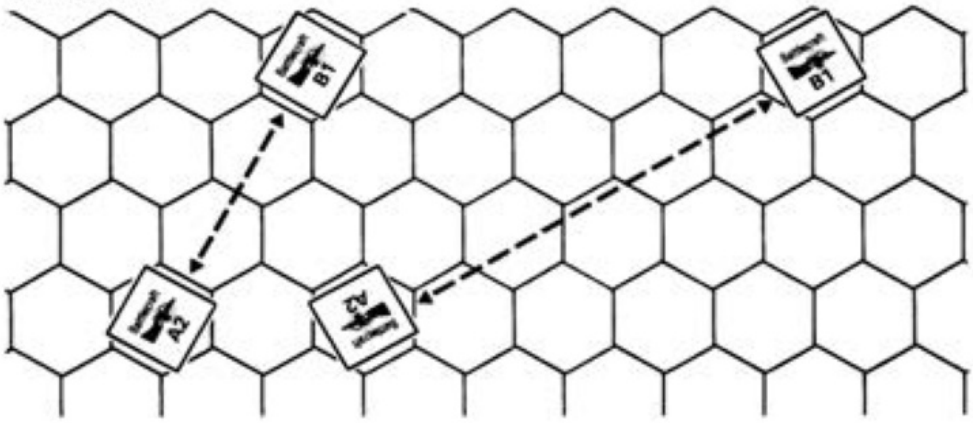
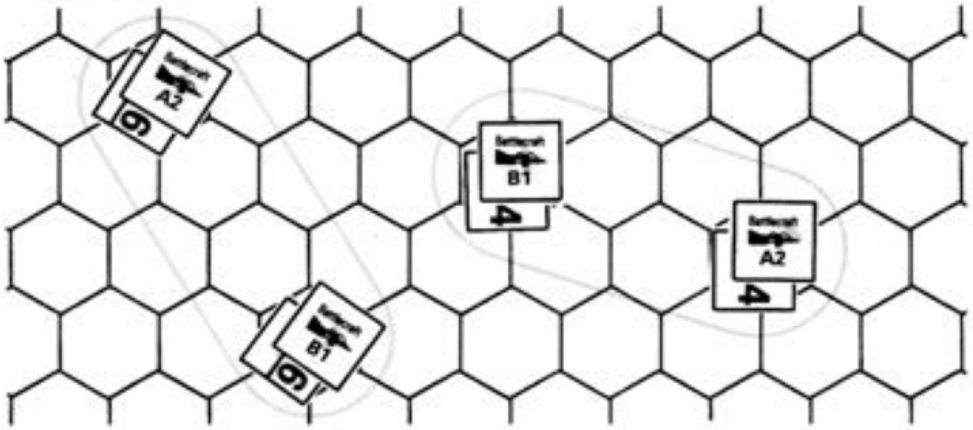


DIAGRAM B



Class 1 Force Field. *Damaged or Destroyed:* The force field may not be used at all.

Class 2 Force Field. *Damaged:* The force field is considered to have the protective ability of a Class 1 force field and may not be activated at the moment of missile interception (see 9.8). *Destroyed:* The force field may not be used at all.

Hunter Pod. *Damaged:* All missiles in the pod are lost, including any currently prepared for launch (cross them off the appropriate Spaceship Log); laser and particle barrages may not be conducted from the pod (laser and particle bursts may be conducted); the pod may not be used to hyperjump. *Destroyed:* The pod is totally eliminated.

Light Weapon or Heavy Weapon Pod. *Damaged:* All missiles in the pod are lost, including any currently prepared for launch; any guided missiles previously launched from the pod may not be issued Maneuver Commands; laser and particle barrages may not be conducted from the pod (laser and particle bursts may be conducted). *Destroyed:* The pod is totally eliminated.

Arsenal Pod. *Damaged:* Same as damage to a light weapon or heavy weapon pod; in addition, the pod only allows one fire per Fire Phase (instead of two). *Destroyed:* The pod is totally eliminated.

Battle Communications Pod. *Damaged:* The pod allows only one additional Battle Command per Command Phase (instead of two); the pod's Targeting Program modifier is eliminated (the modifier of the spaceship or firing pod being used instead); the pod does not allow an additional fire; the pod does not increase the range of an Active Search. *Destroyed:* The pod is totally eliminated.

Tractor Pod. *Damaged or Destroyed:* The tractor beam may not be used at all.

Battlecraft Pod. *Damaged or Destroyed:* A battlecraft may not be launched from or dock with the pod. A battlecraft inside the pod when damaged or destroyed may not be used at all.

Standard or Augmented Pod Jump. *Damaged or Destroyed:* The pod may not be used to hyperjump.

Energy Pod. *Damaged:* Ten Energy Units must be expended each friendly Command Phase (in addition to any other expenditures of energy) until a total of 144 Energy Units have been expended (including previously expended energy). *Destroyed:* The total expenditure of energy for the spaceship must be immediately brought up to 144 Energy Units; the pod is considered empty.

Damage and destruction of any other pod has no effect on play (but may affect a victory in a scenario). The capabilities of a pod or other part are not affected when made *vulnerable.*

[9.0] Missile Launch and Interception

GENERAL RULE:

During a player's Fire Phase, he may launch missiles from any of his spaceships that possess missile-carrying pods. Certain missiles must be prepared before launch, depending on the type of missile and the pod from which it is being launched. Once launched, each missile is moved in accordance with 6.0, and is issued Commands in accordance with 7.0 and the restrictions of the following cases. The Interception Routine is undertaken each time any missile is in a hex occupied by an enemy unit. If interception occurs, the missile explodes, destroying itself and the enemy unit (unless the enemy unit is a spaceship with an active force field).

CASES:

[9.1] The number of missiles of each type a pod possesses at the beginning of play is listed on the Pod Attribute Chart.

The chart also states whether or not the missile must be prepared before it may be launched, by issuing a Prepare Missile Command to the spaceship in a previous Command Phase (see 7.4). In order to launch a missile, it must be atop the launching spaceship at the beginning of the friendly Fire Phase, or must be a type of missile that need not be prepared.

[9.2] The launch of a missile counts as one fire towards the total number of fires that may be conducted from a spaceship in a single Fire Phase.

Thus, if a spaceship with two light weapon pods launches two missiles in a Fire Phase, it may conduct only one additional fire (from its burster). Also see 8.1. The launch of a missile does not require the expenditure of energy by the missile or by the launching spaceship.

[9.3] When the Phasing player wishes to launch a missile, he chooses a missile counter and marks his Spaceship Log.

He chooses the counter that matches the chosen missile type and, if a guided missile, whose identity letter matches that of the spaceship from which it is being launched. He then writes the number of the pod from which it is being launched and the identity number of the missile in the first unused **Pod/#** box for that missile type on the appropriate Spaceship Log. For example, if guided missile A-03 were launched from a heavy weapon pod (assigned pod #2), the Phasing player would write **2/3** in the first unused Pod/# box of the guided missile section of Spaceship A's Log.

[9.4] A missile is launched by assigning it a Velocity marker and placing it face-down in a hex adjacent to the launching spaceship.

A missile must be assigned a Velocity marker *equal to, one greater than,* or *one less than* the current velocity of the spaceship from which it is launched. **Exception:** The initial velocity of a missile must be at least **1**.

The hex in which a missile may be placed and the direction in which the missile may point are restricted. The following diagrams show all possible missile placements. Diagram C is used if the launching ship points toward a hexside. Diagram D is used if it points toward a hex corner. A missile may be placed in any hex shown and, within a hex, may point in any direction indicated by an arrow radiating from the hex.

DIAGRAM C

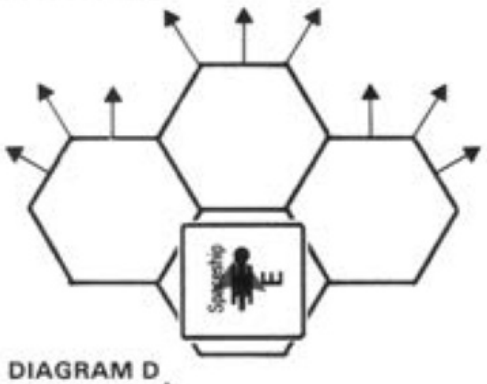
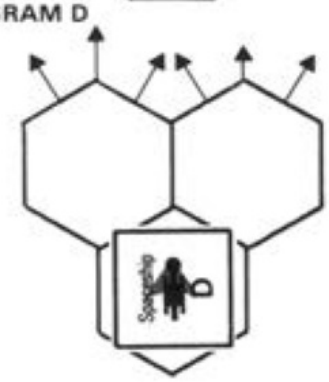


DIAGRAM D



A launched missile may not be initially placed in the hex occupied by the launching spaceship. More than one missile may be launched into the same hex. Such missiles may be assigned identical or different directions and velocities.

[9.5] The Velocity Rating, Maneuver Rating, and Energy Unit Allowance of each type of missile are listed on the Missile Chart.

The Civ Level of each missile is equal to the Civ Level of the pod from which it is launched. Unguided missiles may not receive Maneuver Commands and are thus not listed on the chart. Other types of missiles may be issued Maneuver Commands in accordance with 2.5 and 7.1. Note that a missile must expend one Energy Unit for each and every Maneuver Command that it receives (see 7.5). A missile must be removed from play at the conclusion of the friendly Movement Phase following the Command Phase in which it expended its last Energy Unit.

[9.6] The Interception Routine is performed whenever a friendly missile enters a hex occupied by an enemy unit, or when any enemy unit enters a hex occupied by a friendly missile, regardless of the Phase in progress.

The player owning the missile undertakes the following steps:

1. Determine the relative velocity of the two units as described in 8.3. The conditions of 8.4 may also apply, but the conditions of 8.5 do not. Since the range during interception will always be zero, it has no effect.

2. Cross-reference the determined relative velocity with the Civ Level of the intercepting missile on the Missile Interception Table to determine the Interception Chance.

3. Roll the die. If the die result is equal to or less than the Interception Chance, interception has occurred; the missile explodes, destroying itself and the enemy unit (**Exception**: See 9.8). If the die result is greater than the Interception Chance, interception does not occur; the missile and the enemy unit are not affected, and interception is not attempted between the two units again as long as they occupy the same hex.

The Interception Routine must be conducted whenever possible. **Exception**: A player may decline to conduct the Interception Routine if his involved missile has a Civ Level of 8 (but may not decline if being intercepted by an enemy missile). The Interception Routine is not conducted between friendly units; interception between friendly units is impossible.

If an enemy and a friendly missile occupy the same hex, the Phasing player, and then the non-Phasing player, conduct the Interception Routine.

If a friendly missile is in a hex occupied by more than one enemy unit, the Interception Routine is conducted with the enemy unit with the lowest relative velocity only. If more than one such unit presents the same relative velocity, the player owning the missile may choose the unit to intercept.

[9.7] **The Missile Interception Table is used during the Interception Routine to determine if a missile intercepts an enemy unit.**

See charts and tables.

[9.8] **A spaceship with an active force field is not destroyed when intercepted by an enemy missile.**

Instead, the player owning the missile rolls the die and refers to the Hit Table, in accordance with 8.7. If the spaceship has a Class 1 active force field, the Hit Table is used *three* times when interception occurs. If the spaceship has a Class 2 active force field, the Hit Table is used *once* when interception takes place.

A player owning a spaceship that possesses an inactive force field may attempt to activate the force field at the moment of interception. When the enemy player has determined that interception occurs, the player owning the spaceship rolls the die. If the die result is *more than one less* than the Civ Level of the spaceship, the force field is activated; flip the spaceship counter over. On any other die result, the spaceship is destroyed. No Command is required to activate a force field in this manner. However, an Energy Block must be expended (see 7.5) and a Battle Command is required to deactivate the force field (see 7.4).

[9.9] **Four unguided missiles may be launched from a MIMS that is currently in play during any one friendly Fire Phase.**

The player owning the MIMS declares this action and places four unguided missile counters in hexes adjacent to the MIMS, in accordance with 9.4 (as if the MIMS were a spaceship). He may use any of his unused missile counters of the appropriate type for this purpose. The launch of these missiles is not recorded on the Spaceship Log, but a single MIMS may only conduct this special launch once. No Command is required for a MIMS to launch its missiles, and the MIMS remains in play after doing so, as an intelligent missile.

[10.0] How to Use the Spaceship Logs

GENERAL RULE:

Before beginning play, each player fills out a Spaceship Log for each spaceship assigned to him by the scenario instructions. During the game, energy expenditure by each ship and the current status of the ship's equipment is updated on the Log. The status of the ship's missiles and battlecraft is also kept track of on the Log.

CASES:

[10.1] **The Compartment section of the Spaceship Log is used to assign pods specific locations on the spaceship and to record hits incurred by the pods, the bridge, the engine, and the force field.**

To prepare the Compartment section for play, complete the following steps:

1. If the spaceship does *not* have a force field, put an **X** in the Force Field Status box.

2. Consult the Spaceship Attribute Chart to find how many pods the spaceship possesses. Then cross out all boxes for pods beyond the number available to the ship.

3. Consult the scenario instructions to find which types of pods the ship possesses. Write the names of these pods in the available numbered Pod Type boxes. The pods may be assigned to the boxes in any order the player desires, as long as the boxes crossed out in accordance with Step 2 are not used.

4. Note the Armor Rating for the bridge, engine, and force field (that of the spaceship) and for each pod in the appropriate boxes.

During play, the Status box for the bridge, engine, force field, and each pod is used to record hits incurred, by marking a **V**, **D**, or **X** in each box (see 8.8).

[10.2] **Each Missile section of the Spaceship Log is used to note how many missiles are available on the spaceship and to record the expenditure of energy by each missile after launch.**

To prepare each Missile section for play, count the total number of missiles of that type available (the total of the amounts listed on the Pod Attribute Chart for the ship's missile-carrying pods). If this total is less than the total number of missiles shown in the section, cross out lines in the section (from the bottom up) until the totals match. Unless the Unguided Missile section is being filled out, consult the Missile Chart to find how many Energy Units each missile possesses (see 9.5). If this number is less than the number of Energy Unit boxes for each missile, cross out boxes for each missile (starting from the right) until the numbers match.

When a missile is prepared for launch or is launched (if preparation is not necessary), the owning player notes the number of the pod and the identity number of the missile counter in the first available Pod/# box in the appropriate Missile section. A pod that has launched a number of missiles equal to the amount of missiles shown for the pod on the Pod Attribute Chart may launch no more missiles of that type.

Each time a missile receives a Maneuver Command, the owning player must put an **X** through one of the missile's Energy Unit boxes. When all the boxes for a missile are marked, the missile is removed from play (see 9.5). Unguided missiles do not expend Energy Units, and thus have no Energy Unit boxes.

[10.3] **The Energy Unit Track and Energy Block section of the Spaceship Log is used to note how much energy the Spaceship possesses at the start of play and to record the expenditure of energy during play.**

An *Energy Unit* is a measure of energy common to all units in the game. An *Energy Block* is a variable measure of energy used by spaceships only. The size of an Energy Block for a particular spaceship equals the Energy Burn Rate of the spaceship (see the Spaceship Attribute Chart) and is expressed in terms of Energy Units. Thus, an Energy Block for a *Flute* spaceship equals six Energy Units.

To calculate the number of Energy Blocks possessed by a spaceship at the start of play, divide the Energy Capacity of the ship by its Energy Burn Rate. If the ship possesses an energy pod, add 144 to the Energy Capacity before dividing. This number is noted on the Energy Block section of the log by crossing out boxes in excess of the number (from the bottom up).

Before beginning play, cross out all the boxes on the Energy Unit Track in excess of the spaceship's Energy Burn Rate, and place an Energy Unit marker in the **0** space of the track.

Each time a spaceship expends an Energy Block during play (see 7.5) an Energy Block is marked. When all the available boxes are marked, the spaceship has no more energy (see 7.6).

Each time a spaceship expends one or more Energy Units (for conducting fire or operating a tractor beam) the Energy Unit marker is moved the appropriate number of spaces along the Energy Unit Track. Each time the marker is moved into the space matching the Energy Burn Rate of the spaceship, the marker is returned to the **0** space, and the expenditure of one Energy *Block* is marked. Movement of the marker is then continued (if necessary).

[10.4] **The Battlecraft section of the Spaceship Log is used to record the status of a launched battlecraft.**

The status of the battlecraft's bridge and engine (in terms of hits received) is recorded in the Bridge and Engine boxes. The expenditure of Energy Units by the battlecraft is recorded by marking the Energy Unit Boxes (see 7.5). When all the Energy Unit Boxes for a battlecraft are marked, it has no more energy. A *docked* battlecraft may receive Energy Units from its spaceship; erase marks from any number of the battlecraft's Energy Units Boxes and record the expenditure of an equal number of Energy Units by the ship. A battlecraft may never possess more than 15 Energy Units.

SPACESHIP LOG EXAMPLE
See page 7.

A Spaceship Log for a *Flute* with a heavy weapon pod, an energy pod, a battlecraft pod (containing a *Terwillicker-5000*) and a standard jump pod (all armor Class 2) has been filled out.

After crossing out the box for Pod 5, the player assigned the four pods to the remaining boxes in the Compartment section and noted the Armor Ratings of all the compartments. He then consulted the Pod Attribute Chart to see how many missiles the heavy weapon pod carries and crossed out four unguided missile boxes, two guided missile lines, two intelligent missile lines, and one MIMS line. The heavy weapon pod has a Civ Level of 7, which means that the guided missiles possess nine Energy Units each, the intelligent missiles possess seven Energy Units each, and the MIMS six Energy Units (as noted on the Missile Chart); so the player crossed out the rightmost columns of boxes in each Missile section to indicate these reductions.

The ship possesses **35** Energy Blocks (**66** Energy Capacity plus **144** for the pod, divided by the Energy Burn Rate of **6**). The player crossed out all but the top **35** boxes in the Energy Block section. Since the Energy Burn rate is **6**, he crossed out the **7** and **8** spaces of the Energy Unit Track. He then placed an Energy Unit marker on the **0** space of the Track. Finally, the player noted the Armor Class of the battlecraft's bridge and engine in the Battlecraft section.

[11.0] Scenarios

GENERAL RULE:

Before beginning the game, the players choose which of the following five scenarios they will play. Each scenario provides a brief description of the situation, how the maps are arranged, the forces that each player receives, how those forces are set up, the deployment of planets and asteroid fields (if any), and how each player may acheive victory. Scenario 1 is recommended for those playing *DeltaVee* for the first time.

In all scenarios, a spaceship or battlecraft may be destroyed for purposes of victory. A spaceship or battlecraft is considered destroyed if it does not possess an active force field when intercepted by an enemy missile; or if its bridge, engine and more than half of its pods are destroyed (remove the unit from play). Unless specifically stated otherwise in a scenario, hyperjumping may not be conducted.

SCENARIO 1: The Showdown

A gang of cutthroats flying a long range pursuit craft stolen from a federal installation on a nearby planet are intercepted by a similar ship manned by the local guard. Enraged by the theft, the military authorities order the complete destruction of the criminals.

Map Deployment:

Player 1 Deployment: One *Piccolo* (spaceship counter E) with one hunter pod, in hex A0207 pointing towards 3 o'clock with a velocity of 1. Use Spaceship Log 1.

Player 2 Deployment: One *Piccolo* (spaceship counter D) with one hunter pod, in hex B1511 pointing towards 9 o'clock with a velocity of 1. Use Spaceship Log 1.

Victory Conditions: The instant one player's spaceship is destroyed, the opposing player is declared the winner. Neither player may conduct a jump.

SCENARIO 2: The First Shot

Tensions were high between the opposed governments of Venable and Laidley, two planets in the Eridani system. When a Venable light cruiser ventured into Laidley space to "test the waters," it encountered two Laidley patrol craft. The smaller ships opened fire and the brief Eridani War began.

Map Deployment:

Player 1 Deployment: One *Sword* (spaceship counter A) with two heavy weapon pods, one battle communications pod, one battlecraft pod (with a *Terwillicker-X*) and one energy pod; in hex A1112, pointing towards 9 o'clock with a velocity of 3. All pods are armor Class 2. Use Spaceship Log Nr. 2.

Player 2 Deployment: Two *Daggers* (counters A and B) each with a heavy weapon pod and an energy pod (armor Class 2); in hexes A0706 and A0705, pointing towards 3 o'clock with a velocity of 3. Use two copies of Spaceship Log Nr. 1.

Victory Conditions: Player 1 wins if both *Daggers* are destroyed. Player 2 wins if the *Sword* is destroyed. If neither player has fulfilled his victory conditions and all opposing spaceships and battlecraft are more than 25 hexes apart at any time, the game is declared a draw.

SCENARIO 3: Escape from Tau Ceti

As four smuggler ships head out of the Tau Ceti system with a cargo of deadly drugs and escaped convicts, a federal heavy cruiser gives chase. The naval vessel's orders are to prevent the criminal ships from hyperjumping at any cost.

Map Deployment

Player 1 Deployment:

One Corco *Iota* (spaceship counter A) with two heavy weapon pods (neither pod has any intelligent missiles or MIMS), one energy pod, one standard jump pod, one crew pod, and four buffered cargo pods. All pods are armor Class 2. Use Spaceship Log Nr. 2.

Two Corco *Gammas* (counters B and C), each with one light weapon pod, one standard jump pod, and one standard cargo pod. All pods are armor Class 1. Use two copies of Spaceship Log Nr. 1.

One Corco *Gamma* (counter D) with one standard jump pod, one crew pod, and one standard cargo pod. All pods are armor Class 0. Use Spaceship Log Nr. 1.

All four ships must be placed within one hex of A0909. All must be placed in different hexes and must point toward 3 o'clock with a velocity of 2. Each spaceship has already expended 3 Energy Blocks.

Player 2 Deployment: One *Sword* (counter A) with two arsenal pods, one battle communications pod and two battlecraft pods (each with a *Terwillicker-X*); in any hex in the 0100 hexrow of map A, pointing in any direction with a velocity of 3. All pods are armor Class 2. Use Spaceship Log Nr. 2.

Victory Conditions: Player 1 wins if the Corco *Iota or* two Corco *Gammas* are able to jump (see 7.2). A ship may not jump until it enters map E (to be placed during play as shown in the diagram) or enters a map placed above or below map E (in the direction of the arrows). Player 1 also wins if the *Sword* is destroyed. Player 2 wins if *three* enemy ships are destroyed (including the Corco *Iota*).

SCENARIO 4: Pirates!

A Corco *Mu* loaded with passengers and valuable cargo is approaching the planet Esata after hyperjumping into the system. As it nears the dense Bicker's Asteroid Belt, it is set upon by a pair of ruthless pirate ships looking for booty. A distress call is sent to Esata in the hopes that aid will come to the Corco *Mu*.

Map Deployment:

Player 1 Deployment:

One Corco *Mu* (spaceship counter B) with one light weapon pod, one battlecraft pod (with a *Terwillicker-5000*), one standard jump pod, one energy pod, one standard support pod, three standard cabin pods, one crew pod, and three buffered cargo pods; in hex C1406, pointing at 9 o'clock with a velocity of 2. All pods are armor Class 1. Use Spaceship Log Nr. 2.

One *Dagger* (spaceship counter A) with one heavy weapon pod and one energy pod (both armor Class 2); in hex A0409 pointing at 3 o'clock with a velocity of 1. Use Spaceship Log Nr. 1. The *Dagger* may not move, fire or be fired at until *alerted*. During each friendly Command Phase, Player 1 rolls the die; if the result is a **1** or **2**, the *Dagger* has been alerted and may be used normally (beginning with that Command Phase).

Player 2 Deployment:

One *Flute* (counter A) with one arsenal pod, one energy pod, one tractor pod, and one buffered cargo pod; in hex B1612, pointing in any direction with a velocity of 0. All pods are armor Class 2. Use Spaceship Log Nr. 1.

One *Flute* (counter B) with one heavy weapon pod, one battlecraft pod (with a *Terwillicker-X*), one energy pod and one buffered cargo pod; in hex B1611, pointing in any direction with a velocity of 0. All pods are armor Class 2. Use Spaceship Log Nr. 1.

Planet: In hex A0409

Asteroid Fields: In hexes C0902, C0904, C0907, C0909, C0912 and C0915. An asteroid field is considered to exist in all six hexes adjacent to each Asteroid Field marker, as well as in the hex occupied by each marker.

Victory Conditions: Player 1 wins the moment the Corco *Mu* is put into orbit around Esata, or if both *Flutes* are destroyed. If the Corco *Mu* is destroyed, the game is immediately declared a draw. Player 2 wins if either *Flute* is able to dock with the Corco *Mu* (see 7.4).

SCENARIO 5: Attack on Convoy Red

A vital convoy of arms and ammunition hurriedly organized by the Imperial fleet and establishment merchants heads for the planet Zaraznov, after hyperjumping from a nearby system. A successful revolutionary uprising on the planet has gained control of small well-equipped fleet. A task force from the insurgents is patrolling Zaraznov space, awaiting the expected convoy.

Map Deployment:

A	B	C

Player 1 Deployment:

One *Spear* (spaceship counter A) with two arsenal pods, one battle communications pod, one battlecraft pod (with a *Terwillicker-X* battlecraft), one tractor pod (Civ Level 8), one standard jump pod, one energy pod, and one crew pod. All pods are armor Class 2. Use Spaceship Log Nr. 2.

Three Corco *Zetas* (counters B, C and D) each with one light weapon pod, one energy pod, one standard jump pod, and three standard cargo pods. All pods are armor Class 1. Use three copies of Spaceship Log Nr. 1.

One *Dagger* (counter E) with a hunter pod and an energy pod. Both pods are armor Class 2. Use Spaceship Log Nr. 2.

All five ships must be placed within one hex of A0407. All must be placed in different hexes. Player 1 may choose any one direction and any one velocity (from 0 to 4) for the ships, but all must point in the same relative direction and have the same velocity. Each spaceship has already expended 10 Energy Blocks. Spaceship D has no guided missiles remaining.

Player 2 Deployment:

One *Clarinet* (counter A) with two heavy pods, one battle communications pod, two battlecraft pods (each with a *Terwillicker-X* battlecraft), one energy pod and one crew pod; in hex B0717. All pods are armor Class 2. Use Spaceship Log Nr. 2.

One *Flute* (counter B) with one heavy weapon pod, one battlecraft pod (with a Terwillicker-X), one energy pod and one equipment pod; in hex B0617. All pods are Armor Class 2. Use Spaceship Log Nr. 1.

One *Flute* (counter C) with one light weapon pod, one tractor pod (Civ Level 8), one energy pod and one crew pod; in hex B0816. All pods are armor Class 2. Use Spaceship Log Nr. 1.

Player 2 may choose any one direction and any one velocity (from 0 to 6) for the ships, but all must point in the same relative direction and have the same velocity.

Planet: In hex C1110.

Victory Conditions:

Player 1 receives one Victory Point for each of his spaceships placed in orbit around the planet. He receives an additional VP for each undestroyed cargo pod aboard such a ship. Once a spaceship is placed in orbit, it is removed from play. When player 1 has accumulated eight VP's, he wins the game.

Player 2 receives one VP for each enemy ship destroyed and each cargo pod destroyed (thus, the destruction of a Corco *Zeta* is worth four VP's). Player 2 loses two VP's for each of his *Flutes* that is destroyed. When player 2 has accumulated eight VP's, he wins the game. If his *Clarinet* is destroyed, Player 2 loses the game (regardless of how many VP's he has earned).

DeltaVee
Design Credits

Game Design and Development:
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Physical Systems and Graphics:
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Playtesting:
Justin Leites, Darryl Esakof, David McCorkhill, Scott Laiken, Edward J. Woods, James Mulligan
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Production:
Carolyn Felder, Ted Koller, Manfred F. Milkuhn, Michael E. Moore, Bob Ryer, Ken Stec

Abbreviated Sequence of Play

1. First Player Movement Phase
2. Second Player Command Phase
   - **a.** Detection Segment
   - **b.** Command Segment
3. First Player Fire Phase
4. Second Player Movement Phase
5. First Player Command Phase
   - **a.** Detection Segment
   - **b.** Command Segment
6. Second Player Fire Phase

Delta Vee: The Universe Tactical Space Combat System **Counter Section Nr. 1 (200 pieces): Front**

Quantity of sections of this identical type: 1 Total quantity of Sections (all types) in game: 1

Spaceship A	Spaceship B	Spaceship C	Spaceship D	Spaceship E	Battlecraft A1	Battlecraft A2	Battlecraft B1	Battlecraft B2	Unguided 01
Unguided 02	Unguided 03	Unguided 04	Unguided 05	Unguided 06	Unguided 07	Unguided 08	Unguided 09	Unguided 10	Unguided 11

PLAYER ONE

Unguided 12	Unguided 13	Unguided 14	Unguided 15	Unguided 16	Guided A-01	Guided A-02	Guided A-03	Guided A-04	Guided A-05
Guided A-06	Guided A-07	Guided A-08	Guided A-09	Guided A-10	Guided A-11	Guided A-12	Guided A-13	Guided A-14	Guided B-01
Guided B-02	Guided B-03	Guided B-04	Guided B-05	Guided B-06	Guided B-07	Guided B-08	Guided B-09	Guided B-10	Guided C-01
Guided C-02	Guided C-03	Intelligent 21	Intelligent 22	Intelligent 23	Intelligent 24	Intelligent 25	Intelligent 26	Intelligent 27	Intelligent 28

Battlecraft A1	Battlecraft A2	Battlecraft B1	Unguided 01	Unguided 02	Unguided 03	Unguided 04	Unguided 05	Unguided 06	Unguided 07
Unguided 08	Unguided 09	Unguided 10	Unguided 11	Unguided 12	Guided A-01	Guided A-02	Guided A-03	Guided A-04	Guided A-05

PLAYER TWO

Guided A-06	Guided A-07	Guided A-08	Guided A-09	Guided A-10	Guided A-11	Guided A-12	Guided A-13	Guided A-14	Guided B-01
Guided B-02	Guided B-03	Guided B-04	Guided B-05	Guided C-01	Guided C-02	Guided C-03	Intelligent 21	Intelligent 22	Intelligent 23

4	4	4	4	4	Spaceship A	Spaceship B	Intelligent 24	Intelligent 25	Intelligent 26
4	4	4	4	6	Spaceship C	Spaceship D	MIMS 31	MIMS 32	MIMS 33

RANDOMIZER CHITS

MIMS 31	MIMS 32	1	2	3	4	5	0	0	0
MIMS 33	MIMS 34	6	7	8	9	10	0	0	0

6	6	6	6	6	6	6	6	6	8
8	8	8	8	8					

NEUTRAL MARKERS

0	0	2	2	2	2	2	2	2	2
2	2	2	2	4	4	4	4	4	4

		Prep Jump				Asteroids	Asteroids	Asteroids	Planet
		Prep Jump				Asteroids	Asteroids	Asteroids	Planet

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Delta Vee Counter Section Nr. 1 (200 pieces): Back

Spaceship B

Spaceship A

Spaceship D

Spaceship C

5 5 5 5 5

7 5 5 5 5

9 7 7 7 7 7 7 7 7 7

9 9 9 9 9

Jump

Jump

Spaceship E

Spaceship D

Spaceship C

Spaceship B

Spaceship A

1 1 1

1 1 1

3 3 3 3 3 3 3 3 1 1

5 5 5 5 5 5 3 3 3 3

DeltaVee

UNIVERSE

Tactical Space Combat System

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